## **JACOBS**



# **TES IV**

APPENDIX A
BACKGROUND DOCUMENTS
HANNAH MARINE
LEMONT, ILLONIS



IN ASSOCIATION WITH:
TETRA TECH
METCALF & EDDY
ICAIR LIFE SYSTEMS
KELLOGG CORPORATION
GEO/RESOURCE CONSULTANTS
BATTELLE PACIFIC NORTHWEST LABORATORIES
DEVELOPMENT PLANNING AND RESEARCH ASSOCIATES

APPENDIX A
BACKGROUND DOCUMENTS
HANNAH MARINE
LEMONT, ILLONIS

#### APPENDIX A

#### Bibliography of Background Documents Hannah Marine, Lemont, Illinois

Source: Metropolitan Sanitary District

Document No.	Description
001.a	Notice of Violation - Hexane Discharge (3/14/75)
001	<pre>IWC Field Operation - Investigation: Sandblast/Paint (5/9/75)</pre>
002-003 .	IWC Field Operation - Special Investigation Oil Slick (11/5/76)
004	MSD - Private Treatment Plant Inspection: Oil Cleanup (11/8/76)
005	MSD - Private Treatment Plant Inspection: Oil Cleanup (11/9/76)
006	MSD - Private Treatment Plant Inspection: Oil Slick (11/22/76)
007	MSD - Private Treatment Plant Inspection: Oil Slick (1/12/77)
008	MSD - Private Treatment Plant Inspection: Oil Slick (2/4/77)
009	County Clean Streams Committee: Oil Slick (10/27/79)
010-011	MSD - Special Investigation: Oil slick High pH waste in holding pond (10/29/79)
012-016	<pre>IWC Field Operation - Special Investigation: Styrene, toluene, xylene, and high pH water in ponds and landfills (11/2/79)</pre>
017	MSD eviction notice to Hannah Inland Waterways (11/13/79)
018	MSD Notice of Violation to Hannah Inland Waterways (11/19/79)
019-020	<pre>IWC - Special Investigation: Tank Truck Dumping (11/25/79)</pre>

021-022	<pre>IWC Field Operation - Special Investigation: Tank Truck Dumping (11/25/79)</pre>
023-024	MSD Notice of Termination of Hannah Lease (11/26/79)
025	MSD - Analysis of Sample (11/27/79)
026-027	MSD - Cover letter and notes (11/28/79 - 1/11/80)
028-029	MSD - Analysis of Samples (12/17/79)
030	MSD - Cover letter for Analysis (12/18/79)
031	MSD - Notice of Violation to Hannah Marine Corporation (12/21/79)
032-033	EPA - Potential Hazardous Waste Site: Identification and Preliminary Report (1/21/80)
034	Conciliation Agreement between MSD and Hannah Marine Corp. (1/28/80)
035-036	Analysis of Soil Samples (2/18/80)
037	EPA - Potential Hazardous Waste Site: Final Strategy Determination (4/28/80)
038	Conciliation Agreement between MSD and Hannah Marine Corporation (5/21/80)
039-040	IWC Field Operation - Special Investigation: Sludge Pond (4/29/80)
041	Hannah Marine correspondence with MSD: Sludge Cleanup (7/31/80)
042	<pre>IWC Field Operation - Special Investigation: Cleanup Operations (8/5/80)</pre>
043	CCSC Correspondence with MSD: Channel 7 expose (8/24/80)
044-045	IWC Field Operation - Special Investigation: Cleanup and current procedures (8/26/80)
046-048	Notes on Cleanup Progress (10/1/80)
049	<pre>IWC Field Operation - Special Investigation: Progress of Cleanup (3/13/81)</pre>

053	Inspection of Operations: Wastes generated (8/27/81)
054	MSD - Industrial Waste Control Plant Summary (8/27/81)
055	MSD - Report of Hazardous Materials: Storage of Fuels and Oils (9/1/81)
057	Conciliation Agreement between MSD and Hannah Marine Corporation (3/22/82)
058-059	<pre>IWC Field Operation - Special Investigation: Storage tank and chlorinator (5/25/82)</pre>
060	Message to Roy Kaufman regarding storage tank (6/18/82)
061-062	EPA - Potential Hazardous Waste: Preliminary Assessment (3/29/84)
063	MSD - Notice of Violation: Discharge into Canal (3/10/86)
064	Conciliation Agreement between MSD and Hannah Marine Corp. (3/24/86)
065	Letter explaining discharge to Canal (3/31/86)
066	Conciliation Agreement between MSD and Hannah Marine Corp. (4/22/86)
067	MSD - Letter regarding discharge violation and sampling (2/23/87)
068	MSD - Notice of Violation: Discharge to Canal (3/20/87)
069-070	Interview Notes: John doe, previous employee of Hannah Marine Corp. (4/2/87)
071-073	Interview Notes: Al Gidreitas and Rich Sustrich, employees of MDS (4/14/87)

NOTICE OF VIOLATION

TO: Mr. Donald C. Hannah, Pres. New Avenue (P.O. Box 189) Lemont, Ill.

Location: C.S.S.C. at Allied Oil Dock 3301 California Chicago, Ill.

Investigation has revealed that you are in violation of the Sewage and Waste Control Ordinance of the Metropolitan Sanitary District of Greater Chicago and the applicable State Statutes pertaining to pollution. Your violation consists of discharging an effluent with excessive concentrations of hexane soluble material (500,000 mg/l)-grab-1/8/75, from Barge #2001 to the Chicago Sanitary and Ship Canal.

You or your authorized representative, are requested to appear at 100 East Erie Street, Room 312, Chicago, Illinois on March 31, 19 75 at 2 p.m. , to conciliate on the subject matter, and for you to submit at that time, a plan for abatement of such pollution and an outline of the schedule for the installation of permanent facilities.

YOUR FAILURE TO APPEAR IN RESPONSE TO THIS NOTICE WILL SUBJECT YOU TO SUCH PENALTY AND LEGAL ACTION AS PROVIDED BY LAW.

Witness March 14, 19 75
THE METROPOLITAN SANITARY DISTRICT
OF GREATER CHICAGO

Bart T. Lynam, General Superintendent

By Cal Lue-Hing, D.Sc., P/E

Director

Research and Development

Jerome Tobias

Chief Enforcement Officer

I W C FIELD OPERATION - X INVESTIGATION

#### Subject of Investigation:

Date of Investigation: May 9, 1975

Hannah Inland Waterways, Inc. Rt. 83 & Rt. 171 Lemont, Ill.

Originated by:  Main Office  Clean Streams	Person Date Time
Other Complaint:  Waterway Sewer Other	Surveillance
Supervisor Assigned:  F. Kelly	Warer Samplers:
Sample O Photographs O	Additional Intermation Attached

INVESTIGATION:

The subject company was visited while on routine surveillance in the Lemont area. Much equipment used for sandblasting and spray painting operations was observed. Upon talking to a Mr. Lou Gregovich, who said he was the chief storekeeper, it was discovered that it is "normal operation" to sandblast, spray with red lead primer, and spray paint the barges while they are in the Chicago Sanitary & ship Canal. These operations were not being carried out while the writer was present, but all this equipment was ready for immediate use. The compressors for the blasting and spraying operations were running, the primer and paint cans were open and the spraying hoses were in the cans.

One of the barges present in the canal was almost completely painted the "Hannah Blue" color, while one end of the barge had been freshly sand-blasted. The black, gritty sand was all ever the deck of the barge, and had accumulated to a thickness of about 2" on the bank for the full length of the barge. It's presence in the canal could not be detected because the material sinks immediately, but from the huge amount present on the bank and the employee's statement regarding sandblasting of barges while in the canal, it can be safely deduced that a large amount of the sandblasting material is in the canal.

The writer advised the employees to cease the operations, but from the past history of this company their co-operation cannot be taken for granted. The company will be kept under a more strict surveillance and photos and possibly samples will be taken.

cc: J. Tobias
Approved:

N. Venuso

001

F. Kelly

#### IWC FIELD OPERATION - SPECIAL INVESTIGATION

#### Subject of Investigation:

#### Date of Investigation:

Hannah Inland Waterways

November 5, 1976

Water Samplers:

Route 171 and 83

Lemont

Originated by:	Main Office		<u>Person</u>	<u>Date</u>	<u>Time</u>
Trt. Plant	Clean Strea	ams Q	James Dencek	11/5/76	1410
Other 💍	Local Author	ority			
Type of Compla	int:				<del> </del>
Waterway 🔾	Sewer 🔘	Other 🔘			
C					

Roy Kaufmann, P.C.O.I

Supervisor Assigned:

Sample Photographs (x) Additional Information Attached (X)

INVESTIGATION:

HELICOPTER SURVEILLANCE FOLLOW-UP
Light Oil Film From Barges at Subject to
Route 83 Bridge Over C.S. & S.C., South Bank

The writer contacted subject's George Smith, who delegated Ed Gans, Foreman, to accompany the writer to barge location. (Indicated in poor quality Polaroid Photo #6).

The 6 foot (average) rainbow band extending from upstream end of barges to Route 83 bridge was not visible from the ground, possibly because of wind/wave activity.

A diminished blue slick was visible between meeting ends of two barges (Photo #6) along with rainbow slick patches and globules of oil in the canal between the bank and barges being worked on at subject in vicinity of fixed piping along bank, canal water pump, and boiler room.

- Continued -

Subj: Hannah Inland Waterways

Nov. 5, 1976

The discharge from a vacuum pump which uses a small quantity of canal water for seal/cooling purposes was observed to contain blue slick patches as it trickled over the bank into the canal. Mr. Gans had vacuum pump canal water flow stopped (operations completed for the day), placed oil absorbant in trickle discharge and agreed to pickup oil located between barges and bank with absorbant.

Subject pumps canal water into a common manifold for (1) boiler feed, (2) barge wash water, and (3) vacuum pump seal/cool:

- Canal water is pumped to open, rectangular tank storage (designated Station #11) in boiler house for use in boiler. Water treatment chemicals are injected in feed line from storage tank to boiler. Boiler blow down is returned to canal through floor drain under boiler (designated Station #2).
- 2. Barge wash water is pumped from canal to wash water storage tankage for heating in preparation for internal barge washing with high pressure nozzels.
- 3. A minimal flow rate of canal water is used in sealing and cooling components of vacuum pump which is used in spent barge wash water removal system.

Private Treatment Plant surveillance at subject will be expanded to include barge cleaning activity and canal condition between bank and barges.

RK:vb Roy Kaufmann, P.C.O.I
Approved:

Nicholas Venuso, P.C.O.III

cc: J. Tobias

# Private Treatment Plant Inspection

Name	HANNAH INLAND WATERWAYS Date of Inspection 11/8/76
Address	CTE 934171 Plant Operator on Duty
Town	Not Present SUNDY 30'S
PLANT (	CONDITION:
	PETRON STR# IL CS 45C INTRUE AT OPEN PECTANGULAR
	STORGEE TANK BEHIND BOILER, WATTER WAS CLOUNY
. •	WITH SLEHT SEDIMENT. 11:15 AM.
	Secondary STAT 2 ROILER POWN SUSCHAPER AT CHORL BROK
	AROUT 5 FT. DOWD. SAMPLE WAS CHOUSY WITH
	SHIGHT SEDIMENT. 11:45 AM
	Territary
110	CLERNOP! ED GANS, THE FREEMAN, PIT AN ARSDERANT PHOTIC
·	FICER 1970 CANAL RETWEEN CANALLYALLY ABAPSE WHICH ON
	Enloctration SORIS UP OIL, HE THEN INSTRUCTED TWO
	SUBDRAINATES TO DO HIKEWICE WITH THEY HAD ALL THE
	OIL CLEANED UF.
Effluent	Appearance: STA+ PTP CL2 CONTACT MADHALE, SAMPLE
SEMI	-CHEAR 11:00 AM
Receivin	g Stream:
	·
Samples	Obtained: STA# 1 18AL, 19T BAD# 4518 18ACT BAD 76-3197 STA#2 16AL.
Photos T	sken: 19T 1/TEASE MET EXD#4519/STA#11 1GAL, 19T, EXD# 4520
	Inspection Made By: Jakon Malay WS
70-7-1	. 004

#### METROPOLITAN SANITARY LISTRICT

Private Treatment Plant Inspection

	LEMONT Not Present Sunny, Low 50
PLANT	CONDITION:
*.	PETMEN OIL CLEANUP: CONTACTED FOREMAN, EDGENS, WH
	SUPERVISED CLEARUR A SLIGHT RAINEOUS REMAINED
	BUT EMPINYEES OF THE COMPANY WERE RECTIFYIN
	Secondary THIS SITUATION AT THE TIME! I WAS
	PRESENT
	Tertiary
	Chlorination
	FIR CLI CONTRCT MANUHILE
Effluent	Appearance: STA #1 / SGROPLE TAKED LIAS CLEAR 11:55 A
_	
Receivi	ng Stream:
	Obtained: STR#1: 1021 41802, R&D#45514   RACT R40#76-5215

005

### METROPOLITAN SANITARY DISTRICT

#### Private Treatment Plant Inspection

Name	HANNAH INCOME WINY. Date of Inspection 11-22-26
Address	RTS3+ RT17/ Plant Operator on Duty DINO FABBLE
Town	LEMONT Not Present CLOUDY 30'S
PLANT C	ONDITION:
	Primary RAINBOW OIL SCICK IN MIDDLE OF
	CANAL, NONE OBSERVED NEAR BANK OF
	PROPERTY
	Secondary
·	
	Tertiary
	Chlorination STA / 1600AM CHLORINE CONTACT
	MANHOLE CLEAR, GOLD TINT
Effluent A	Appearance: STA 2 11: 20Am BOILER ROOM . PIPC
DISCHA	RGE TO CANALLADIACENT TO PUMPHOUSE) SEMECLEAR
Receiving	RGE TO CANAL CADIACENT TO PUMP HOUSE SEMECLEAR  [CS&SC, Intake Ryk.  STEER: STA: 1 11:10 AM CIRCULATING PUMP, PIPE DISCHARGE
	PANT (ADJACENT TO BOILER ROOM) SEMI-CLEAR
Samples (	Obtained: STAI ask LAB 4915 BLOT# 76-3414
Photos Ta	ken: <u>STA 2 945 LAB # 4916 BACT</u> # 76-3415 STA 1/ 94C OF LAB # 4917 BACT# 76-3416
~·	Inspection Made By: Goutth & W.S.

006

# METROPOLITAN SANITARY STRICT Private Treatment Plant Inspection

Name	HANNAH LULAND W.	TERMAS Date of Inspection	1-12-77
Address	RT 834 RT 171	Plant Operator on Dut	у
Town	LEMONT	Not Present 🛛 C	LEAR 0°
PLANT C	CONDITION:	·	
	Primary RAIA	BOW SLICK ALONG	BANK
	BETWEEN BAR	LES + BANK, ALSO	2 FT
	DUT INTO CA	UAL -	
	Secondary		
		·	
		•	· .
	Tertiary		
		نون کا باید در برد و دارد و در	
	Chlorination	· · · · · · · · · · · · · · · · · · ·	
	·	· · · · · · · · · · · · · · · · · · ·	
		· · · · · · · · · · · · · · · · · · ·	·
Effluent A	Appearance: <u> </u>	1:45 Am OFLORINE CON	TACT MA
		CLEAR S	CT. SED
Receiving	Stream: 51A P /	1:50 Am CS+SC OPPO	SITE PU
	• • • •	·	
Samples	Obtained: <u> </u>	+ BAUK - TRACE O OT LAR# 6966 BACT #	77-0137
	iken: STAP QT		
		·	
		Inspection Made By: 108	watelrek
7-1		. 007	

# METROPOLITAN SANITARY DISTRICT Private Treatment Plant Inspection

Name	Hannah Inland WW Date of Inspection 2-4-77
Address	D102 121
Town	Lemont Not Prosent X Snowing
PLANT	CONDITION:
	Primary Sta P" oil between bank & barge
	Secondary
	Tortiony
	Tertiary
	Chloring 11 50 VI P" VI Care of 1
	Chlorination 10 mm Sta P. " No sample due to
	(5+5C)
Effluent	Appearance: 16 mm Statt Chloring contact non
1.16	Cliai Stogreen took
Receivir	ng Stream:
Samples	Obtained: Sta. #1, Igal Ilacte.  The 1714 #77-0375
Photos	Taken: #77-0375
	Inspection Made By: Ackery & Sicis
0-7-1	008 T. DEUNIC

North Harlem Avenue ver Forest, Illinois 60303 co 1-8400 FO 9-9420 Case # 7-137-79
Date: 10/27/79
Time: 10:00 a.m.

Name of Str	eam: Calumet S	Sag Channel				<del></del>
Assignment:	Agency	MSD	Dept.	I.W.	Name	Venuso
Nature of V	iolation; 1	Industrial Waste oris Filling	g I	estic Waste Dumping	Encroachm Other	ent Erosion
Priority:	Hot Line ( Floating Oil	Irgent Cont	tinuous	Intermittent	Other	
Location:	In the Stream	(Facing Down Right Bank	nstream) Le	eft Bank	Other	
Nearest Mun	icipality <u>L</u> e	emont to the West	t	·	Unincorpo	rated Lemont Twnshp
		al Sag Bridge on				
Street Inte	rsection or Br	ridge South side	e Cal Sag	; West side bri	ldge	
Identifying	Landmarks					· · · · · · · · · · · · · · · · · · ·
Additional	Directions			····		
<del></del>						
Skeich Alta	ched Wi	11 Accompany			Phone	
Source of Po	ollution		Ve	erified	Suspec	ted
Color Clo	ear Muddy *	** Brown Red	Milky	Other		
		•	•			er very possible
		Other 55 Gal.				
		•				
Remarks	I was on my w	eav to job, there	efore, di	ld not have tir	ne to emandi	ine what appeared
	to be floating	ng wil on ponded to to get to site	water so	outh of Cal Sag	enthankmer	it. I might not
	I flaged trai	fic to the south	h of brid	ige. Did not r	iote from b	oridge 75 feet
	in air any co	onnection to wate	erway, bu 11 oreek	it Sag bridge of to the west bo	puadrangle streen jung	HA-149 flood
	Ship Canal as	nd Cal Sag bridge	e drain:	;; to Cal Sag.		
_	on Monday and	t they reported t	to Indus	rial Waste.		•
Attach photo	os, nows items	, etc. when ava	ulable			
Observers	Lyman Antield	!				
Phone						

## THE METROPOLITAN SANITARY DISTRICT OF GREATER CHICAGO

#### INDUSTRIAL WASTE CONTROL SECTION

SPECIAL	INVESTIGATIONS -	#4631 - Complaint # 511
		Date Oct. 29, 1979 Time 0815
COMPLAINANT:		
Name: Lyman Anfield	Agency:	Clean Streams Committee
Address:		
Date-Time of Incident		
		Other
Type of Pollution:0il	under the bridge with 5	5 gallon drums on the bank.
INITIAL CONTACT: Main Off	ice Disp	atcher
I.W.C. X Other		
RECEIVED IN FIELD BY:	N. Venuso - PCO II	I
DISPATCHED TO: Name	Corcoran	Title PCO II
	•	Time
PRELIMINARY REPORT: POLITY	TION CONTROL OFFICE	K F. Clark and W. Hayes
responded. A large area of	standing water was foun	d which had a white deposit
on the bottom and a pH of 11	+. (See photo #7) A t	ank truck was observed discharging
to an adjacent holding pond	which was overflowing t	o this area (see photo #6).
The water was collecting in	a low area and no disch	arge to the CSSC or the I&M
Canal was observed.		
Deno Fabbre of Hannah I	nland Waterways Corp. w	as contacted and the area
was inspected. The tank tru	ck was found to be disc	harging clear water with a pH
of ll+. Mr. Fabbre said this	s was water from the oi	l separator used to recover
Signature: 7, C	lade	November 5, 1979
F. Clark, PCO-1		

oil cleaned from oil barges. He had no explanation for the high pH levels. Complaint #511

G Cuconasi

No discharge was found to either the CSSC or the I&M Canal. However, samples were collected from the holding basin and submitted to the R & D Laboratory as waterway samples to determine the nature of the material. It was pointed out to Mr. Fabbre that if the material flowed to a waterway it would be a violation of the MSD Ordinance. He said he would build a dike around the

R. Sustich of the North Central Section conducted a followup investigation area to prevent this. after heavy rains.

7, clak

#### I W C FIELD OPERATION - SPECIAL INVESTIGATION

#### Subject of Investigation:

#### Date of Investigation:

Hannah Inland Waterways Rte's 171 & 83 Lemont, Illinois

November 2, 5-9, 1979

Mr.	Deno	Fabbre,	Yard	Supt.	Phone:	242-3210
				_		

Originated by:  Main Office  Clean Streams	Person	<u>Date</u>	<u> Time</u>
Other	4631- #511		
Waterway Sewer Other	Follow-up		

Illinois & Michigan Canal

#### Supervisor Assigned:

Water Samplers:

Sustich, O'Brien, Hubbard

Sample O	Photographs (	Additional Information Attached 6

#### INVESTIGATION:

This report concerns a follow-up investigation of 4631-#511 concerning possible sludge or waste dumping at the subject company.

Investigation on October 29, 1979, by F. Clark, PCO I, and W. Hayes, PCO I, resulted in the observation of company personnel applying alkaline waste waters to one of several ponds at the north end of the facility. No discharges to either the Chicago Sanitary and Ship Canal or the Illinois and Michigan Canal were observed at the time.

#### November 2, 1979

The writer, accompanied by D. Hubbard, PCO I, visited the facility to survey the accumulations of waste waters.

Investigators at this time observed two accumulations of waste at the north end of the facility. These were a shallow pool of highly alkaline water (pH=11+) containing approximately 2,000 to 5,000 gallons and a deeper, diked-in pool containing 300 to 500 cubic yards of very viscous, dark brown, organic sludge. This material in the second pond had extremely strong odors of styrene, toluene, and xylene, and subsequent tests of the head space above solid samples in closed containers revealed a 20% LEL.

At the south end of the facility, investigators noted a much larger pool of varying depths on the order of 50,000 to 100,000 gallons. This pool also exhibited a high pH condition, strong odors of styrene, toluene, and xylene, a 10% LEL, and what appeared to be a visible, polymerized plastic sludge lining the pond.

- continued -

At several locations near the north pools, investigators also found large areas of alkaline residue from previous ponds.

Inspection of the Illinois and Michigan Canal revealed a band of leachate approximately 20 to 30 feet in length and roughly corresponding to the eastern most edge of the larger north sludge pond. This point is 100 to 120 feet from the pond. The leachate at this point consisted of alkaline waters carrying a brown oil with aromatic odors similar to the ponds. Samples of the leachate were obtained at this time.

Investigators contacted Mr. Deno Fabbre, Yard Supertindent, to initiate clean-up operations and to develop a method to intercept the leachate.

Mr. Fabbre indicated that he was aware of the accumulated wastes and had contracted earth-moving equipment to bury the ponds. The company was not yet aware of the leachate entering the Illinois and Michigan Canal. Mr. Fabbre also stated that the company had maintained a similar landfill at the northern site and that between 1965 and 1970 the entire site had been buried with clay and stone. Mr. Fabbre assumed that the present landfill operation was almost directly above the previous one. Mr. Fabbre stated that he was unaware of the necessity for obtaining permits for landfill operations.

The company was requested to deploy a boom at the leachate site and to maintain this boom to prevent further discharge to the waterway. The company was also requested to immediately abandon plans to bury the remaining wastes as it appeared that complete removal was necessary to prevent deterioration of the leachate condition.

#### November 5, 1979

The writer, accompanied by J. Tomaras, PCO III, A Giedraitis, PCO III, and D. Hubbard, PCO I, returned to the facility.

Investigators on this date found that the leachate of oil had increased considerably, but that the boom was effective in retaining the oil for clean-up.

After a complete survey of the facility, the conclusion was again reached that the only effective method of eliminating the problems would be the complete removal of the pooled liquids and the underlying contaminated soil.

Mr. Fabbre was informed of this conclusion and, in light of the history of this site, concurred. The company contacted several waste disposal firms regarding clean-up operations.

#### November 6, 1979

The writer, accompanied by D. Hubbard, PCO I, surveyed the facility with Jack Barnett, Illinois Environmental Protection Agency. Mr. Barnett confirmed the need for complete removal of material from the site.

#### November 7, 1979

The writer, accompanied by T. O'Brien, PCO I, met Officers F. McLean, G. Burgey, J. Finnern, and S. Dormady of the United States Coast Guard.

Although all parties agreed that the problem had not reached a navigable waterway, the USCG initiated action to facilitate the issuance of an IEPA waste hauling permit necessary to conduct clean-up.

The company on this date selected Browning-Ferris Industries of Lemont, Illinois to conduct clean-up.

#### November 8, 1979

T. O'Brien and the writer met with G. Zurowski, Sales Engineer of Browning-Ferris Industries and Mr. Fabbre regarding clean-up operations.

Investigators on this date noted the installation of a sump, located between the ponds and the I & M Canal, to intercept the leachate. The accumulated water in the sump was alkaline and showed the same brown oil as the leachate site. Mr. Fabbre indicated that several more sumps would be installed to intercept the leachate flow as soon as possible.

The sumped waste, as well as the surface accumulations, will be removed to the Browning-Ferris Industries' Benton Harbor facility in Waukegan, Illinois.

A total of 12 samples were obtained during this investigation. All samples were delivered to the R & D Lab at the West-Southwest Plant for analysis. Included with this report are four photographs of the northern ponding area.

A significant anomaly observed during this investigation is the presence of brown oil at both the leachate site and the sump while the pooled liquids appeared relatively oil free. This, along with the higher elevation of the pooled liquids, suggests the possibility that the visible oil may have a subsurface origin and that the recent surface actions have facilitated its release. Although information concerning the previous landfill operation is extremely sketchy, it appears that the volume of material buried between 1965 and 1970 may far exceed the present surface accumulation. It is recommended that, concurrent with clean-up operations, an investigation into subsurface accumulations be conducted as part of a complete estimate of the impact of these landfill operations.

	age Samples of 7 uland Waterways	
•	·	
Compount		etected in Superns
	South Pord	North Poul
m æigt edgt hetere	4,5 mg/2	18.5 mg/2
Styrene (monomer)	mone	none
B enzine	mone	mont
<u>toluene</u>	mone.	noul_
o - vytini	nort	noni
m- pylene	mone.	mi
p-syline	none	.none
phenoi		2/2 mg/l
edyl wilati	none	none
<b>A .</b>		
- richitando	none	<u></u>
benjois seil	none	noni
0 étection limite are 1	-2 mg/& sech con	yound exects f
lenzois acid, which her a		
2		U • •
		<del> </del>
		- · · ·
105년(11년) 보인 11월 - 11년 시대 11년		
erin samula and a s		* · · · · · · · · · · · · · · · · · · ·
1979 DEC 12 9" HE F8" " " " " " " " " " " " " " " " " " "		
, <u>,                                  </u>		

Date
co. Name Haxial Inland Workings
Co. Address
Reason for Issuance of Violation # 19-687
1 Course's report of 9/4/29 whice tes
that do no get north of waste all
is harded by Previou de Co. Springfield
La disfasai Companhos not related
exist this disposed though Maritist
Villation issued for factions to refeert
Shad a kanter of Sixer Harch 1.1979
Action to be Taken
(is must should and of lieste aci
Circulated (in month, must dietily
rance of harder a disformal site
Comment relate the hauling of thes
Material Morant Muchest Louise
E gred /
Signad I

INTER OFFICE MEMORANDUM

THE MARKED CHARACTER CONTROL CONTROL

TO: Allen S. Lavin, Attorney

FROM: Cecil Lue-Hing

SUBJECT: HANNAH INLAND WATERWAYS LOCATED AT THE JUNCTION

OF THE MAIN CHANNEL AND THE CAL-SAG CHANNEL

On October 29, 1979, in response to a complaint from the Clean Streams Committee, personnel of the Industrial Waste Division of the Research and Development Department conducted an inspection of the property leased by the Hannah Inland Waterways Corp. from the Metropolitan Sanitary District of Greater Chicago. This inspection revealed that the company is now operating a barge cleaning facility and is using a portion of the property that they lease from the District for their industrial waste. This site was not approved by any District personnel nor was the District informed that the company was engaging in commercial barge cleaning operations. The material that has been disposed of on the ground and in pits has a low flash point, a high pH value and is oily in nature.

It is recommended that the Law Department immediately issue a 60 day eviction notice to the Hannah Inland Waterways Corp. for violation of their lease and to require that all material having been deposited in an improper manner be removed from District property to an authorized site. That after the waste material has been removed the contaminated ground also is to be excavated and removed from the District property to a proper disposal site and clean approved back-fill material be deposited on the MSD property in its place.

If the company intends to continue its barge cleaning operation they should be required to install closed holding tanks for their waste material. These tanks are to have dikes that will contain a minimum of 110% of the total capacity of the tanks that the dikes surround and that there be proper loading and off-loading facilities constructed for the handling of this waste material.

If you require further information regarding this matter, please contact Mr. Stanley W. Whitebloom at 751-5697.

Cecil Lue-Hing

Director

Research and Development

017

CLH: Sillido

BOARD OF COMMISSIONERS

INSURANCE COVERAGE PROVID NOT FOR INTERNATIONAL MAIL RECEIPT FOR CERTIFIED AND DATE WIKH AND DATE (See Reverse) LIMER SPECIAL DELIVERY
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JOANNE H, ALTER
THOMAS S. FULLER
EDWARD W. GJERTSEN
WILLIAM A. JASKULA
NELLIE L. JONES
JAMES C. KIRIE
CHESTER P. MAJEWSKI
NICHOLAS I. MELAS
RICHARD J. TROY

#### IN THE NAME OF

THE METROPOLITAN SANITARY DISTRICT OF GREATER CHICAGO COOK COUNTY, ILLINOIS

THE METROPOLITAN SANITARY )
DISTRICT OF GREATER CHICAGO)
vs. )
HANNAH INLAND WATERWAYS )

COMPLAINT NO. 79-687

NOTICE OF VIOLATION

TO: Mr. Carl F. Lambert, Mgr. Safety & Compliance P.O. Box 189
Lemont, Illinois 60439

Investigation has revealed that you have failed to comply with the requirements for reporting to the Sanitary District concerning the transfer and disposition of industrial waste sludges or production residues, and are therefore in violation of Article IV, Section 3 of the Sewage and Waste Control Ordinance of the Metropolitan Sanitary District of Greater Chicago. Your violation consists of: failure to disclose to the Sanitary District, in writing, in forms furnished by the Sanitary District, the quantity, volume and chemical composition of industrial waste sludge or production residue delivered since March 1, 1979 to a scavenger or other entity hired to transport and/or dispose of same, and to identify the name and address of such scavenger.

You or your authorized representative, are requested to appear at 100 E. Erie St., Industrial Waste Division, Room 413, Chicago, Illinois on December 3, 1979 at 11:00 a.m. to conciliate on the subject matter.

YOUR FAILURE TO APPEAR IN RESPONSE TO THIS NOTICE WILL SUBJECT YOU TO SUCH PENALTY AND LEGAL ACTION AS PROVIDED BY LAW.

Jerome Tobias

Chief Enforcement Officer

k \

Witness November 19, 1979
The Metropolitan Sanitary District

of Greater Chicago
Hugh H. McMillan, General Superintendent

Cecil Lue-Hing, D.Sc., P.E.

Director / Research and Development

018

### THE METROPOLITAN SANITARY DISTRICT OF GREATER CHICAGO INDUSTRIAL WASTE CONTROL SECTION

SPECIAL INVESTIGATIONS - #4631 - Complaint # 548
Date 11/25/79 Time 11:00 P
COMPLAINANT:
Name: Officer Lee Brannam Agency: Willow Springs Police Dept.
Address: 8480 Archer Willow Springs Phone: 839-2721
Date-Time of Incident 11/25/79 now
TYPE OF COMPLAINT: Sewer Waterway Other Tank Truck Dumping
Location: 20 feet south of Desplaines River - 600 ft.East of Willow Springs Road.
Type of Pollution: Chemical dumped with strong odor
INITIAL CONTACT: Main Office Dispatcher X
I.W.C. Other Dispatcher called Mr. Dencek at his residence.
RECEIVED IN FIELD BY: J. Dencek at his residence
DISPATCHED TO: Name J. Corcoran Title PCO II
Date 11-25-79 Time 11:06 P.M.
PRELIMINARY REPORT: POLLUTION CONTROL OFFICER J. Corcoran called police
to meet them at 8500 S. Willow Springs Road to proceed to the site for details of the
nature of the complaint. Officer Brannam pointed out the chemical that was dumped
located about 20 feet South of the bank of the Desplaines River and about 600 feet
East of Willow Springs Road. The chemical was brown with a very strong odor. Quantity
of chemical is about 15 to 20 gallons. It did not enter a waterway at this time but
was dumped between the Desplaines River and the Main Channel. A grab sample was
obtained at this time. (11:45 P.M.)
- continued -
Signature: Date

Officer Brannam explained that Officer James Kubik was sent to make an investigation when strong odors were detected from Willow Springs Road which is about 600 feet from where the chemical was dumped. Officer Kubik returned to the Police Station when he became sick from the odors. Officer Brannam went to the site and found a Tank Truck moving slowly without lights. He took the license #24528. The driver explained that his truck had stalled and an employee from Ashland Chemical had to pull his truck to get it started and that he was going to pick up a load from the Barge at Ashland Chemical Co. Dock on the Main Channel which was presently being unloaded. When the truck left, an employee advised Officer Brannam that the truck was from Hannah Waterways Industries in Lemont, Illinois.

12:15 A.M. Called Mr. Whitebloom and informed him of investigation findings. He directed that the sample be delivered to Mr. Don Harper at the M.S.D. Main Laboratory in the morning and analized for nature of the chemical. He advised to have the police arrest the driver for violation of State Statute Chapter 42, Section 326.

Officer Brannam stated that he did not see the driver dump and he was unable to get the truck registration on the leads machine.

12:40 A.M. Officers Brannam and Kubik left the Police Station to go to Hannah Waterways Co. in an effort to locate the truck. They advised that any information they get will be reported to me tomorrow.

Willow Springs Police Station Complaint #16783.

12:45 A.M. Called M.S.D. Systems Dispatcher and informed him that I had called Mr. Whitebloom and informed him of this preliminary investigation. Investigation will terminate at this time with a scheduled follow-up in the morning.

Reviewed by

Al Qiedraitis - PCO III

JC:k

I W C FILD OPERATION - SPECIAL L. JESTIGATION

#### Subject of Investigation:

#### Date of Investigation:

Hannah Inland Waterways Rts. 171 & 83 Lemont, Illinois November 26, 1979

Person	Date	Time
J. Dencek	11/25/79	11:06
		<del> </del>
		ļ
River		
Water Samplers:		
	J. Dencek River	J. Dencek 11/25/79 River

R. Sustich, PCO I

J. Corcoran, PCO II

Sample (X) Photographs (Additional Information Attached (

INVESTIGATION:

4631-548 Follow-up investigation of chemical dumped.

The one quart sample that was obtained of chemical that was dumped along the gravel road that is parallel with the Desplaines River that was obtained on the night of November 25, 1979, was delivered to Don Harper at the M.S.D. Main Laboratory today. He was advised to call Mr. Whitebloom to determine specific analysis to be performed.

Went to Ashland Chemical Co., 8500 S. Willow Springs Road, Willow Springs, Illinois. Contacted Mr. Arnold Tankerman who advised that he was unloading a barge of Toluene and Xylene to Ashland Chemical Co. facilities when he helped the driver of the Hannah Inland Waterways start his stalled truck due to a dead battery. He did not see the driver dump the Chemical. He stated that the driver was going to the Hannah Barge that was finished unloading and remove any remaining product. Mr. Arnonld advised that he did not call for the tank truck, as far as he knows the personnel on the Hannah Barge called.

The area where the chemical was dumped was checked in the presence of Mr. Arnold who opened the locked steel bar gate to the gravel road along the Desplaines River which is ingress and egress to Ashland Chemical Company barge dock facility. The dumped chemical was dispersed in puddles of water caused by the heavy rain. A careful check of the area determined that the chemical did not enter the waterways.

The gate has an M.S.D. lock and one from Ashland Chemical Co. The Company opens this gate for access to their Dock Facility and therefore should assume responsibility for scavengers that may enter and dump in this desolate area. This is M.S.D. property that has several piles of debris and discarded household applicances.

- continued -

Special Investigation:

Page 2

Hannah Inland Waterways Rts. 171 & 83 Lemont, Illinois November 26, 1979

Went to Hannah Inland Waterways Company and located the tank truck with the same license number that the Willow Springs Police had taken from the truck that was at the site where the chemical was dumped (#24528).

Contacted Mr. Fabbre , Supt. in his office and informed him of the chemical that was dumped and that his tank truck has the same license number that was taken by the Willow Springs Police at the dump site last night. He explained that he is aware of his truck being at the barge at Ashland Chemical Company to remove the remaining product from the barge when the unloading was finished, however, he does not have any knowledge of the driver dumping anything. When the driver reports to work this afternoon he will ask him about it. He was informed that a Sludge Manifest Form should be completed when he removes product from barges.

He was present when a sample was taken of the contents in the truck from a hatch on top of the truck tank. A sample was also taken from a small puddle on the ground at the valve on the rear of the truck tank. He advised that the product removed from the barges is put in the company seperator.

Went to the Willow Springs Police Station and advised Office Ralph Oliver that the truck was located at Hannah Inland Waterways. He was of the opinion that an arrest would not be may due to lack of evidence.

The two samples that were obtained were delivered to Don Harper at the Main Laboratory for comparison analysis. Transporter of the samples was R. Sustich, PCO I.

Called Mr. Fabbre, November 30, 1979, and he said he talked to the driver and the driver told him that he did not dump the chemical that the truck was empty when he left for the barge at Ashland Chemical Company Dock. He advised that the driver's name is Joseph Gutierrez.

/Corcoran, PCO II (Badge #111)

Reviewed:

Al Giedraitis, PCO III

JC:k

**BOARD OF COMMISSIONERS** JOANNE H. ALTER

NICHOLAS J. ME PRESIDENT

OF GREATER

100 EAST ERIE ST., CHICAGO, ILLINOIS 60611 .... 751.5600 

THOMAS S. FULLER EDWARD W. GJERTSEN WILLIAM A. JASKULA NELLIE L JONES CHESTER P. MAJEWSKI NICHOLAS J. MELAS

rauger ifr, eriberiteitett General Superintendent

REGISTERED MAIL 751-5722 RETURN RECEIPT REQUESTED

November 26. 1979

Mr. James A. Hannah Hannah Inland Waterways Corporation P. O. Box 189

Lemont, Illinois 60439

SUBJECT:

90-DAY NOTICE OF TERMINATION OF LEASE dated Sanitary District and Hannah Inland Waterways

Dear Sir:

Personnel of The Metropolitan Sanitary District of Greater Chicago Research and Development Department on October 29, 1979, inspected the property leased to Hannah Inland Waterways Corp., at the junction of the Main Channel and the Cal-Sag Channel, by virtue of a Lease Agreement dated September 14, 1961, and which is legally described in Exhibit A which is attached hereto and made a part hereof. The inspection revealed that the company is operating a barge cleaning facility on the property and is using a portion thereof for disposal of industrial wastes.

The material which has been disposed of on the ground has a low flash point, a high pH value and is oily in nature. The Sanitary District has not authorized this activity nor was it informed that the Lessee would engage in such operations. The disposal of this material on the premises is in direct violation of Sections 3.05 and 5.10 of the Lease. For particulars, see Exhibit 3 attached hereto.

Accordingly, HANNAH INLAND WATERWAYS CORPORATION IS HEREBY NOTIFIED, PURSUANT TO THE PROVISIONS OF PARAGRAPH 3.09 OF THE AFORE-SAID LEASE, THAT UPON THE EXPIRATION OF THE PERIOD OF NINETY DAYS (90) DAYS FROM ITS RECEIPT HEREOF, THE METROPOLITAN SANITARY DISTRICT OF GREATER CHICAGO WILL TAKE ALL STEPS NECESSARY TO TERMINATE SAID LEASE AND REMOVE HANNAH INLAND WATERWAYS CORPORATION FROM THE PREMISES.

Furthermore, you are required within 90 days of your receipt hereof to remove all improperly deposited material and contaminated earth to an authorized site and replace the contaminated earth with approved back-fill material to be deposited on the Metropolitan Sanitary District property in its place. In the event of your failure to do same, The Metropolitan Sanitary District of Greater Chicago will take all necessary steps to terminate said Lease and remove you from the premises. If Hannah Inland Waterways Corporation fails to remove this material, such removal may be performed by the Sanitary District and the costs charged to the Lessee pursuant to Section 5.10 of the Lease.

In the event that Hannah Inland Waterways Corporation desires to continue its barge cleaning operations in a manner permitted by the Lease, after the foregoing breaches of said Lease are rectified, the Attorney's Staff will be available for consultation with respect thereto.

Very truly yours,

METROPOLITAN SANITARY DISTRICT OF GREATER CHICAGO

By:

Hugh H. McMillan General Superintendent

Allen S. Lavin, Attorney

PREPARED BY:

)

E. T. Karolewski

Real Estate Administrator

HHM: ASL: ETK: FG: il

bcc: Jaskula/Lue Hing/File.

#### THE METROPOLITAN SANITARY DISTRICT OF GREATER CHICAGO

**DEPARTMENT:** 

DATE: November 27, 1979

TO:

Dr. N. Kelada, Head, Instrumentation & Methodology

FROM:

D. W. Sher, Instrumentation Chemist 3

SUBJECT: Industrial Waste Sample #2190, Project 72-915-9A

A sample of a brown liquid floating on rainwater was submitted for qualitative analysis. The brown material had an odor characteristic of aromatic solvents, and had low viscosity. appear soluble in water.

About 65 ml was spun down in the centrifuge to remove particulate matter. The supernatant was then distilled in the Mini-Lab setup. About 60 ml of a clear material was collected, distilling in a range of 132-140°C. The sample was not taken to dryness, although at the end of the distillation it was noted that the vapor temperature was wavering down slightly. A trace of water which came over initially was removed with sodium sulfate.

A drop of the original supernatant was evaporated on a NaCl plate for IR spectroscopy. The spectrum of this dark brown residue is shown in Fig. 1; the only bands observed being aliphatic C-H in the 2970-2850 cm<sup>-1</sup> region and C-C bands at 1460 and 1380 cm<sup>-1</sup>, typical of asphaltum.

The distillate was run in a 0.025 mm NaCl cell. The spectrum, Fig. 2, is much more complicated, with peaks characteristic of both aromatic and Aliphatic hydrocarbons present. A spectrum of authentic xylene (Fisher X-5, neutral histological) gave a spectrum that was qualitatively identical with quantitative differences attributable to a slightly different mix of xylene isomers.

In my opinion, this sample is asphaltum (5-10%) dissolved in mixed xylenes solvent.

DWS:wd

attachments

#### THE METROPOLITAN SANITARY DISTRICT OF GREATER CHICAGO

DEPARTMENT:

R&D

DATE: November 28, 1979

TO:

Dr. David T. Lordi, Coordinator of Technical Services

FROM:

Nabih Kelada

SUBJECT:

Industrial Waste Sample #2190

We have received the above special sample from Mr. D. Harper on Nov. 26. As per your directions it was analysed and found to contain the organic substances "asphaltum and mixed xylenes solvent".

Please find the enclosed detailed analytical report from Mr. D. Sher.

Nabih Kelada

NK:wd

attachments

cc: D. Sher

To Mr Dinald Harper The is woulds of special analysis an some le collected by Industral West Division from Willow Springe and.

Q. T. Lordi 11/28/79

XC Dericeh/Whitebloom.

11-29-79

12.5-79 Hannah Marine Cosp. (new name) State they have contracted with Browning -Ferris to remove caustic from ponds along with contaminated sludge from bottom (wankeyan Waiting for final FEPA signature on permit builful Howe contracted with Petro-Chem to clean all caustic barges until they decide: 1. Clean no more caustic barges 2. Build a treatment plant for constic washwater 3, Scavenge it. Jack Barnett IERA advised! Carried 12/11/79 Mr. Updegraf Come in to pick up 80 cludge forms. 1-11-80 Sustich - Caching to 1+ m still possible. Company to source soil bore samples to determine How deep must go

# THE METROPOLITAN SANITARY DISTRICT OF GREATER CHICAGO

DEPARTMENT: R&

DATE: December 17, 1979

TO:

Dr. N. Kelada

FROM:

D. W. Sher

SUBJECT: SPECIAL SAMPLES #2265-2266, PROJECT 72-915-0A

Two samples were submitted by Industrial Waste for identification. The samples were identified as follows:

#2265 Hannah Inland Waterways, Tank Truck (11/26/79)
#2266 Hannah Inland Waterways, Pool Beneath Truck (11/26/79)

Sample 2265 appeared to have an organic layer above a white water layer. Addition of NaCl to this lower layer showed it to be an emulsion of some organic material in water. The top (organic) layer was stripped in a lab distillation setup, with the material coming off between 130 C and 138 C, the expected range for xylene in this setup. IR spectroscopy gave positive identification of xylene.

The residue after evaporation was a liquid, clear with a brownish tinge. IR spectroscopy identified this material as aliphatic hydrocarbons. An aliquot of this residue was dissolved in n-hexane (5% v/v) and run on the Tracor 550 gas chromatograph, using a OV-1 methyl silicone column and flame ionization detector (FID). The resulting chromatogram was extremely complex, with most peaks eluting in the range expected for  $C_9H_{20}$  to  $C_{12}H_{26}$  (defined from the hexane solvent peak and n-alkane standards  $C_8H_{18}$  through  $C_{14}H_{30}$ ). Although I do not have any suitable standard for comparison, the molecular weight range appears reasonable for diesel fuel or  $\ddagger 2$  fuel oil.

Sample 2266 had insufficient material for distillation in our setup. IR spectra were run on the organic layer afterdrying with

TO: Dr. N. Kelada

FROM: D.W. Sher

SUBJECT: Special Samples #2265-2266, Project 72-915-OA

DATE: December 17, 1979

Na<sub>2</sub>SO<sub>4</sub>, giving a spectrum similar to <u>xylene</u>, and the residue after evaporation, again an aliphatic hydrocarbon. The residue after evaporation was a dark brown solid. In general, Sample 2266 resembled sample 2190 previously reported, a dark brown aliphatic residue dissolved in xylene. A 1

David W. Sher

DWS:wd

INTER OFFICE MEMORANDUM

File de Martin TH

# THE METROPOLITAN SANITARY DISTRICT OF GREATER CHICAGO

DEPARTMENT: R&D

DATE: December 18, 1979

TO:

Dr. David T. Lordi, Coordinator of Technical Services

FROM:

Nabih Kelada

SUBJECT:

INDUSTRIAL WASTE TWO SAMPLES #2265 & #2266

We have received the above special two samples identified as:

#2265 Hannah Inland Waterways, Tank Truck (11-26-79)

#2266 Hannah Inland Waterways, Pool Beneath Track(11-26-79)

As per your directions they were analysed for probable identification. Please find the enclosed detailed analytical report from Mr. D. Sher.

Nabih Kelada

NK:wd

attachments

cc: Mr. D. Sher

TO: Stanley Whitebloom

Coordinator of Industrial Wastes

Enclosed are results of analysis of subject Industrial Waste samples. The materials appeared to be an aliphatic hydrocarbon (possibly fuel oil) dissolved in xylene.

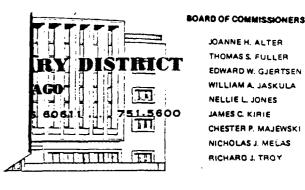
David T. 12/20/79

cc: D. Harper

J. Dencek

N. Kelada

FRED 舒 ATFIED FEE SPECIAL DELIVERY RESTRICTED DELIVERY SHOW TO WHOM, DATE, ADDRESS OF DELIVERY IOW TO WHOM, DATE , DORESS OF DELIVERY V STRICTED DELIVERY ₹ 25 TO WHOM RETURN RECEIPT SERVICE OPTIONAL SERVICES CONSULT POSTMASTER FOR FEES 9761 .1qA ,008t



JOANNE H. ALTER THOMAS S. FULLER EDWARD W. GJERTSEN WILLIAM A. JASKULA NELLIE L. JONES JAMES C. KIRIE CHESTER P. MAJEWSKI NICHOLAS J. MELAS RICHARD J. TROY

IN THE NAME OF THE METROPOLITAN SANITARY DISTRICT OF GREATER CHICAGO COOK COUNTY, ILLINOIS

THE METROPOLITAN SANITARY DISTRICT OF GREATER CHICAGO ) ٧s. HAMMAH MARINE CORP.

COMPLAINT NO. 79-779

PACILITY

WATERWAY

NOTICE OF VIOLATION

TO:

Mr. Dave Updegraf Vice President Ops. P.O. Box 199 Lemont, Illinois 60439

Chicago Sanitary and Ship Canal at Cal-Sag Junction

Investigation has revealed that you are in violation of Appendix A of the Sewage and Waste Control Ordinance of the Metropolitan Sanitary District of Greater Chicago and the applicable State Statutes pertaining to pollution. Your violation consists of: discharging an effluent with excessive concentrations of fats, oils or greases (753 mg/l) which was also visible, suspended solids (290 mg/l) and ammonia as N (13.3 mg/l) all in a grab sample at 11:15 AM on 11/2/79, into the Illinois and Michigan Canal.

You or your authorized representative, are requested to appear at 100 E. Erie St., Industrial Waste Division, Room 413, Chicago, Illinois on January 13, 1930 at 11:00 AM to conciliate on the subject matter, and to submit, at that time, a plan and schedule for abatement of such pollution. Direct phone inquiries should be made to Jerome Tobias at 751-5697.

YOUR FAILURE TO APPEAR IN RESPONSE TO THIS NOTICE WILL SUBJECT YOU TO SUCH PENALTY AND LEGAL ACTION AS PROVIDED BY LAW.

Jerome Tobias

Chief Enforcement Officer

Leaterer Telicas

TC/jgb

December 21, 1979 Witness The Metropolitan Sanitary District of Greater Chicago

Hugh H. McMillan, General Superintendent

Ву

Cecil Lue-Hing, D.Sc., P.E.

Director

Research and Development

*EFA

# POTENTIAL HAZARDOUS WASTE SITE IDENTIFICATION AND PRELIMINARY ASSESSMENT

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1	 •	-,	

IOTE: This form is completed for each potential hezerdous waste site to help set priorities for site inspection. The information ubmitted on this form is based on available records and may be updated on subsequent forms as a result of additional inquiries and on-site inspections.

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2070-2 (10-79)

Continue On Reverse

DICATE ALL APPLICABLE PERMITS HELD BY THE SITE. 1. NPDES PERMIT 2. SPCC PLAN 3. STATE PERMIT (specify): S. LOCAL PERMIT . 6. RCRA TRANSPORTER 4. AIR PERMITS B RCRA TREATER S RCRA DISPOSER 7. RCRA STORER 10. OTHER (specify): B. IN COMPLIANCE? 1. YES \_\_\_ 2. NO 3. UNKNOWN 4. WITH RESPECT TO (list regulation name & number): VIII. PAST REGULATORY ACTIONS A. NONE B. YES (summerize below) IX. INSPECTION ACTIVITY (past or on-going) A NONE B. YES (complete items 1,2,3, & 4 below) 2 DATE OF . PERFORMED PAST ACTION (mo., day, & ye.) 1. TYPE OF ACTIVITY 4. DESCRIPTION (EPA/State) X. REMEDIAL ACTIVITY (past or on-going) A. NONE B. YES (complete items 1, 2, 3, & 4 below) 2. DATE OF PAST ACTION 3. PERFORMED 1. TYPE OF ACTIVITY 4. DESCRIPTION (mo., day, & yr.) (EPA/State) NOTE: Based on the information in Sections III through X, fill out the Preliminary Assessment (Section II) the property MSD strand Ge day line tion perfect to the whole with the Company inspirited Mis Darding Complete Olivery of facility wind is monitoring that activity information on the first page of this form. EPA Form T2070-2 (10-79)

033

#### CONCILIATION AGREEMENT

This AGREEMENT, entered into by and between the METROPOLITAN SANITARY DISTRICT OF GREATER CHICAGO, a Municipal Corporation, organized and existing under and by virtue of the laws of the State of Illinois, hereinafter called the "DISTRICT" and	VIOLATION NOTICE# HEARING DATE	79-779 1 1 1/28/80
Hannah Marine Corp., Lemont, Illinois	•	
hereinafter called the "COMPANY":		
MSD Treatment Plant MSD Waterway I & MSD	M Canal	
WHEREAS it has been alleged that the COMPANY has been and/or is pollution laws contained in the Sewage and Waste Control Ordinanc conciliate; NOW, THEREFORE, it is agreed that the COMPANY will at Co. reports that it has removed the liquit	ce; WHEREAS pa ttain compliar	arties agree to ace as follows:
the south pond and has excavated solids has sunk several sumps to accumulate oil and believes it has prevented continued I & M Canal. It is maintaining a boom and the point where leaching occurred.	from same. from subsur leaching to	It rface the
Co. has had core samples taken, but has i	not received	d a report.

Co. will return on Feb. 26, 1980 at 10:00 am to report. MSD or Hannah may request a meeting before that date.

Company Representative (s)
Dave Updegraf, V.P.

J. W. McMurray, Atty.

034

Nick Lambert, Safety Mgr.

COMPLIANCE DATE:

T. Carmody

5 16 6



18 February 1980

Mr. Dino Fabbre
HANNAH INLAND WATERWAYS CORP.
P.O. Box 189
Lemont, Il. 60439

Dear Mr. Fabbre:

Enclosed please find a copy of the results for soil samples from boring locations B-1, B-2, and B-3. All answers are reported on a dry weight basis.

Also enclosed is a copy of the results for boring #B-2, sample #S-5+5A, AQLS #67114QA. As part of our Quality Assurance Program, this sample was completely run twice at no charge. This can give you an idea as to the reproducibility of each individual test.

We wish to thank you for the opportunity to be of service. If you need further assistance or have any questions, don't hesitate to call.

Sincerely,

Stan S. Zaworski General Manager

SSZ/hn

enclosures



# analytical report

analysis no.: 67107

4 February 1980

Depth (ft.)  $8 \frac{1}{2} - 10$ 

HANNAH INLAND WATERWAYS CORP. P.O. Box 189 Lemont, I1. 60439

Attn: Dino Fabbre

SAMPLE

DESCRIPTION: Boring # B-1 Sample # S-2+2A

date taken:	date received:	date analyzed:
	1/30/80	1/30/80
Arsenic	10.0	ppm
Cadmium	2.43	ppm ·
Chromium, total	11.8	ppm
Copper	50.4	ppm
Lead	79.6	ppm
Mercury	<0.01	ррm
Nickel	20.	рр <b>m</b>
Zinc	118.	p p <b>m</b>
Pheno1	<0.01	ррm
Cyanide	<0.01	ppm
COD	106,000.	ppm
TOC .	4.60	%

<sup>\*</sup>All answers ppm on a dry weight basis

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<b>ŞEPA</b>		AZARDOUS WA		<del></del>	RE	GION SITE	NUMBER	· · · · · · · · · · · · · · · · · · ·
File this form in the regional Haz System; Hazardous Waste Enforce	ardous Waste Log ment Task Force	File and swbmit (EN-335); 401 M	a copy to: U. St., SW; Was	S. Environ	mental Pro C 20460.	otection Ag	ency, Site	Tracking
Hannah Inland	'waterw	1. SITE IDENT	B. STREET					, <u> </u>
Lemont		/ /	D. STATE			E. ZI	P CODE	
Indicate the recommended action(s		II. FINAL DETE		arkina (Y) i	a the see	anniate bas		
	COMMENDATION	The should be	nvoived by in	MARK'X	EPA	ACTION STATE		PRIVATE
A. NO ACTION NEEDED								
B. REMEDIAL ACTION NEEDED, BU (If yee, complete Section III.)	T NO RESOURCES	AVAILABLE						
C. REMEDIAL ACTION (II yes, comp	lete Section IV.)			X			X	
D. ENFORCEMENT ACTION (II yes, managed by the EPA or the State a	na wnei lype ol enid	rcement action is	anticipated.)			<u> </u>	<u> </u>	
E. RATIONALE FOR FINAL STRATE  AS Landl  Listrich  Mister  Mister  F. IF A CASE DEVELOPMENT PLAN  THE DATE PREPARED (MO., day,	HAS BEEN PREP		G. IF AN ENF		T CASE HA			
H. PREPARED INFORMATION  1. NAME  Phyllis  III. REMED	Sed NACTIONS TO			622	<u>3</u>		ATE(MO., di	19, <b>4</b> yr.) -50
List all remedial actions, such as for a list of Key Words for each of remedy.								
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D. TOTAL ESTIMATED COST

# CONCILIATION AGREEMENT

This AGREEMENT, entered into by and between the METROPOLITAN SONITARY DISTRICT OF GREATER CHICAGO, a Municipal Corporation, organized and existing under and by virtue of the laws of the State of Illinois, hereinafter called the "DISTRICT" and DATE 5/21/80  FID 362 60 8994-00  HANNAH MARINE CORPORATION Chicago Sanitary & Ship Canal at Cal-Sag Junction Lemont, IL  MSD Treatment Plant MSD Waterway I & M Canal Alleged Violations Fats, oils or greases; visible oil; total suspended solids; ammo WHEREAS it has been alleged that the COMPANY has been and/or is presently in violation of the pollution laws contained in the Sewage and waste Control Ordinance; WHEREAS parties agree to conciliate; NOW, THEREFORE, it is agreed that the COMPANY will attain compliance as follows:  Company states after they enlarged their three sumps along the I & M Canal they found that they did not require an automatic sump pump. Material collected in the sumps is pumped to a vacuum truck for ultimate disposal. There is no current seepage into the canal. The lagoon in the area west of company buildings has been removed and the area is to be regraded. The area around the sumps will also be filled in.  Company states they are now in compliance with the MSD Ordinance. Company was informed that they must send in MSD Manifest forms whenever a load of sludge is being scavenged. Company filled out white card requesting 12 forms.  COMPLIANCE DATE: NOW		<b>\</b>	_		
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Carl J. Hambest					
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	COMPLIANC	E DATE: NOW			
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Nick Lambert - Safety Mgr.

E. Field

# I W C FIND OPERATION - SPECIAL EXVESTIGATION

# Subject of Investigation:

Hannah Marine Corporation Kingery Road At Archer Avenue Lemont, Illinois F.I.D. #362780828

Originated by:	Main Offic	e Q
Trt. Plant	Clean Stre	
Other O	Local Auti	nority
Type of Comple	aint:	
Waterway 😠	Sewer 🔘	Other 🔘
T113	Mi abi aan Cara	1

Illinois & Michigan Canal Supervisor Assigned:

D	Sugtich	

R. Kaufmann

D	ate	of	Inv	esti	igai	tion:
_						

June 24, 1980

Mr. Carl Lambert - Mgr. of Safety & Compliance

<u>Person</u>	<u>Date</u>	<u>Time</u>
Violation #79-779	1 4-29-80	L_
	<del> </del>	
	<del></del>	

Water Samplers:

None

Sample 🗴

Photographs (x) 3

3 Additional Information Attached (4)

### INVESTIGATION:

The writer, accompanied by R. Kaufmann - PCO II, visited the facility on June 25, 1980 to conduct a compliance inspection with regard to Violation #79-779.

Investigators met with Messrs. Carl Lambert, Manager of Safety and Compliance and Deno Fabbre, Yard Superintendent.

Inspection of the North (East) Pond area revealed that the company had adequately removed the deposited material and had installed several sump points to a depth of approximately 12 feet. Of these, three (3) points remain active, two (2) in the area of the pond itself, and one (1) intercepting sump near the Illinois & Michigan Canal. The company is maintaining these sumps once per week.

Inspection of the South (West) Pond revealed that essentially all of the 50,000 to 100,000 gallons of liquid had disappeared from the site. The company, in April - 1980, removed 5,000 gallons of "caustic wash", indicating that this was sufficient to empty the pond. The company feels that the remainder of the liquid (45,000 to 95,000 gallons) had evaporated during the period of inactivity between November, 1979 and April, 1980. The company also claims, in letter of April 29, 1980, that the area appears to be dry now. Contrary to company claims, the entire area of the South (West) Pond is presently covered by a viscous sludge up to 24 inches in depth. The volume of this sludge appears to be in excess of 10,000 cubic feet and perhaps significantly greater. This material has been found to exhibit a 40% LFL in the atmosphere above accumulations and also to emit detectable organic



Page -2-

Harnah Marine Corporation Kingery Road At Archer Avenue Lemont, Illinois June 24, 1980

amines in the range from 0 to 50 ppm. The material also emits strong organic odors and visually appears oily in nature.

One sludge sample was obtained from the South (West) Pond. This sample was delivered to the R & D Lab at the West-Southwest Plant for analysis. Parameter to be analyzed was General Chemistry.

Presently, the company is in compliance for Violation #79-779 for discharging contaminants to the Illinois & Michigan Canal. However, the clean-up operation for the removal of barge cleanings has been less than satisfactory. The maintenance of 10,000 cubic feet or more of highly volatile organic sludge in open ponds constitutes a continued hazard to any persons near this facility. As such, total clean-up operation including removal of all contaminated soils remains necessary.

Total Samples: 1

Reviewed:

Kaufmann - POO TI

RS/hg

R. Sustich - POO I - Badge #121

# HANNAH MARINE

CORPORATION

KINGERY ROAD AT ARCHER AVENUE LEMONT JULINOIS 60439 (312) 242-3210

July 31, 1980

Mr. Thomas F. Carmody Industrial Waste Division The Metropolitan Sanitary District of Greater Chicago 100 East Erie Street Chicago, Illinois 60611 J. Dencek - Pls. inspect and monitor situation. We are concerned with the statem relative to mixing sludge with Clay. (J. Jolias 8/8/80

Re: Removal of waste residue from / west lagoon at Hannah Marine Corp.

Dear Tom:

Per our letter of July 8, 1980 we are updating the status of sludge removal from the west lagoon at Hannah Marine Corporation.

Deno Fabbre has had Adcock Construction Company come in with a 2 yard backhoe machine and a swamp cat bulldozer with 36" pads to excavate the material. We feel that about one more day's work with this equipment should finish the excavation portion. Then a determination based on analysis of the material can be made as to whether we blend the sludge with clay or take it directly to landfill.

I understand from Mr. Fabbre that one of your representatives was at our location this morning to witness that excavation is being properly accomplished.

We will report to you again by August 31, 1980 as to progress on removal.

Very truly yours,

HANNAH MARINE CORPORATION

DAVID E. UPDEGRAFF,

Vice-President - Operations

DEU/q1

I W C FIELD OPERATION - SPECIAL INVESTIGATION

## Subject of Investigation:

# Date of Investigation:

HANNAH MARINE Rte. 83 & 107th St. Lemont, IL.

August 5, 1980

Additional Information Attached

Originated by:  Trt. Plant Clean Streams Other Local Authority	<u>Person</u> R. Kaufmann	<u>Date</u> 8-5-80	<u>Time</u>
Type of Complaint:  Waterway Sewer Other			
Supervisor Assigned:  J. Kelly, C. Pulaski	Water Samplers:		

### INVESTIGATION:

Sample (

On August 5, 1980, the writer and C. Pulaski, PCO I, visited the subject facility to conduct an inspection regarding the progress of the clean-up being conducted by Hannah Marine of land previously used as a dump site for liquid waste from barge cleaning operations. We met with Mr. Dino Fabry, who took us to the areas in question, at the westernpart of the property where the company was in the process or removing the topsoil down to a solid clay base. The contaminated soil was piled up on the sides for removal by the company's contractor, H. Wigboldy & Sons Excavating, (Phone #785-2121). Mr. Fabry didn't know the future disposal site for this material at the time of this investigation. Pools of reddish-brown water at the sites were a result, according to Mr. Fabry, of previous rains. The pools did not exhibit any trace of oil and had a neutral pH.

Photographs

The area at the east end of the property was then inspected where the company had previously completed a clean-up similar to their current activity at the western sites. The area was filled with a rock and dirt mixture. Three or four large sump pits and numerous scattered monitoring holes were dug to a depth of approximately 30 feet according to Mr. Fabry. The holes and pits contained water which exhibited a solvent-like odor. Oil-absorbent cloths were floating in the pits to absorb any oil floating to the top. There appeared to be only minor amounts of oil in these sump pits. Mr. Fabry then took us to the point in the Illinois and Michigan Canal where oil from area had previously seeped into the canal. There appeared to be a small metal boom in the canal at that point enclosing a small area of stagnant water upon which was a very faint sheen of what appeared to be oil.

Reviewed by:

J. Kelly,/PCO I, Badge #1,40

JK:fk

August 24, 1980 18034 Sayre Avenue Tinley Park, Illinois 60477

Mr. Jack Farnan, Assistant to the President Metropolitan Sanitary District of Greater Chicago 100 East Erie Street Chicago, Illinois 60611

Dear sir;

As you know lcalled your office and talked with you about the matter of the television expose (so called) of Hannah Inland Waterways Co. at mile 304 on the Chicago Sanitary and Ship Canal. As you know this location is near the junction of the Calument Sag Canal and the Ship Canal. I told you two of your Industrial Waste people told me that Channel 7 television gave MSD a raw deal by doing a story about Hanna Inland Waterways and some suspected dumping at their MSD leased property. I did not see the segment on channel 7 although I do watch that station when I watch television. They have good people and do a good job. I called the station and talked with an aid of John Oxman the Business Manager of the station. I was then turned over to the snoop department of that station. They have a name for it, but I cannot remember it at this time. I was told that I would have to have the name of the writer and the day it appeared. Your Industrial Waste people knew neither the name of the writernor the day it appeared. Maybe it was not even channel 7 that did the story. As it might be gathered I am not giving you much to go if you would care to see justice done and your people fairly treated. As you know the ancient Romans had a way with words. They said, "fiat justitia, ruat caelum" (let justice be done, though the heavens fall). I do think it advisable to pursue this matter and not take any crap from journalistic piss ants. I have been told that what they do to people who want to rebut their garbage is a crime. After they get done screwing it up (editing) it does not even sound like the person who wants justice done. People who have the last word are always to be feared. I could always complain the Federal government at the right time. I understand that the Feds are in the hip pocket of the rich television stations and that justice is a word in the dictionary as far as television is concerned.

File: Haunah marine

As you know I am a member of the Cook County Clean Streams Committee and submitted this matter about Hanna some time ago. Although I haven't been that way for some time, I am satisfied from Clean Streams minutes and from talking with your people that the job of clean up is taking place. You should know that I am hard to satisfy as are many other, of the Committee. I am enclosing the inspection report. I reported the wrong location in the report, but happily your people had no trouble finding the location.

Probably this winter since time is not of the essence in this matter and I will have time, I can go down and review the segment at the station and then ask for rebuttal time, if I think it justified. At present I am fighting the battle of the ragweed. I do not know what you can do to get me the facts I need or even if the matter is worthy of getting into a hassle with channel 7 about. I can not proceed until I know who the writer was and the day it appeared. I would appreciate any help you can give. Thanks for your help as always.

Sincerely yours

Lyman anfield

Lyman Anfield, member Cook County Clean Streams Committee

Copy to Channel 7 Snoop Department and Cook County Clean Streams Committee.

August 26, 1980

Mr. Dino Fabre, Yard Superintendent			
Originated by: Main Office	<u>Person</u>	Date	Time
Trt. Plant Clean Streams Cother Local Authority  Type of Complaint:  Waterway X Sewer Other	Progress Inspection		
Supervisor Assigned:	Water Samplers:		
R. Sustich, J. Kelly	None		
Sample (x) Photographs (	Additional Information Attach	ned ()	

### INVESTIGATION:

The writer, accompanied by J. Kelly, PCO I, visited the facility on August 26, 1980, at the company's request to inspect progress in the clean-up of the West Lagoon at this site. Contact was made with Mr. Dino Fabbre, Yard Superintendent, upon arrival.

An inspection of the West Lagoon area revealed that the company had accumulated approximately 1,000 cubic yards of sludge from dredging of the pond. Mr. Fabbre indicated that this material would be mixed with clay at a 2 to 1 ratio and disposed of at CID. The area of the lagoon was also observed to contain approximately 7,500 gallons of a red/brown liquid. This is the area which the company had previously maintained was dry. Mr. Fabbre stated that the new liquid was only rainwater, but was at a loss to explain the obvious discoloration. A sample of this liquid was obtained at this time.

Investigators also questioned Mr. Fabbre as to the changes in operation since dumping was discontinued late in 1979. Mr. Fabbre indicated that the company had been applying 100,000 gallons to the West Lagoon annually and that the lagoon had never evaporated to below the level observed in November, 1979 (approximately 100,000 gallons). Mr. Fabbre was questioned as to the disposal of the liquid layer during 1980, as the company could only account for 5,000 gallons removed. No explanation was offered as to why the West Lagoon had evaporated only during 1980 and not during previous years.

With regard to present barge cleaning operations, Mr. Fabbre indicated that the company maintains 4,000 gallons of clear water for spraying the interior of barges. The company recycles this water through a 168,000 gallon tank in which solids settle cut and oil is separated out by natural flotation. Oil is then pumped off to a 40,000 gallon holding tank for scavenging or used as fuel. Mr. Fabbre stated that the company does not use any cleaning compounds and that the recycled water does not become contaminated and thus will not require disposal.

Investigators at this time noted a 5,500 gallon tank truck from Chemical Waste Management being filled with liquid from the 168,000 gallon separation tank. Mr. Fabbre stated that the tank presently contained approximately 40,000 gallons of solid sludge which the company was now removing to CID landfill. He also indicated that the "clear

(continued)

044

Hannah Marine Corp. Routes 171 & 83 Lemont, Illinois

water for barge cleaning was presently in this tank. A check of the water layer revealed an opaque oily tan liquid with pH = ll+. Mr. Fabbre indicated that this was the "clear water", but that it wasn't clear. During subsequent questioning, Mr. Fabbre could not explain the chemistry by which the company would be able to recycle wash water indefinitely without contamination when he was presently faced with the disposal of 100,000 gallons of contaminated wash water from the same operation.

It appears evident from this inspection that a significant amount of work remains on the clean-up of the West Lagoon and removal of the sludge. In addition, it appears by the obvious discoloration that the water accumulating in the excavated lagoon may also be significantly contaminated and may require additional disposal. A review of barge cleaning operations also casts some degree of doubt on the company claim that it will not generate a wastewater from such operations.

Three samples were obtained from the facility during this investigation. All samples were delivered to the R & D Lab at the West-Southwest Plant for analysis. Parameters to be analyzed were: General Chemistry, Cyanide, Phenol and Trace Metals.

R. Sustich, PCO I, Badge #12

Reviewed:

R Kaufmann POO II

RS/dms

Lagran mer historial reportion sugarding dage
channe reportion is middle-un sugurt
a thin time the company submit is the mod
a complete explanation of the harp
channes of man genetion.— Immone

04

10-1-80

Hannah Marine Suc. Progress meeting on 90 day inchor notice

Carl Tambert - Have nah Harrison, - R. Sustich - Peos MIST Frank Gudiner - Real Estate Lity, 1,50

Company presented generator copies of mis Domanifest forms for O removal of contaminated soil from last pond area and Q sludge- general of form 168,000 tanks be, Chom World higher highest he hustich deted sludge was very solid and had to be bosomed by pumping courtie washer a ter three it to liquidize it

matter of pumping down whit posed was discussed . TSS free am mornia only parameter in violation of less A grab sample . Company, would prefer some additional evaporation while removing present piles of contaminated soil : 7.15 D stressed importance of full illamp and fill of west posed before winter put stop to activity.

Company was informed 7157 requires achemetic of barge cleaning operation; volumes and path of waster aters; disposal. Real istate atty. racced point that base, specific cleaning only as adjunct of regain of barges, while it appears company is daining for shop cleaning. Transmiss to receptate terms, like sental fees

Company will return on 10-10-80 at 10 in with Vice President Opdegraf and Dine Fabry, Operations

Company will pump down pumps on sait 1+M area and for have sump water word 834 ( for metale ste.

ise 5/21/80 agreenent

10/2/80 Hannak harine: nick Lambert called to state they will Start devotering the west pour with the intention of felling in that portion from which much has been removed and fill it with clay. Co. was instructed to notify much so before felling so inspection can be made. At Giedraitis is notified.

10-16-80 Hannah Manne

- 1) One more week for Migherly morning submitted to date.
- 2) meeting with CIF to citing durating anea dan true be kept in attractive. shape, in meder mowed etc.
- 3 Company in flattening clamage ( stee ( drumes and desposing in Wieghort loads of dist. Good drums and bring, sold or returned to suppliers of lister oil or chemicals at him drawe come in bebyective; me ampty drume.
- 4) Studge in 108,000 yal. tank about /2 removed. Will continue until tank is virtually dry lil is pumped from top for burning in backer Congress or walled to a ford to alward of the big tank; its plan is to continuelly scarenge sheet ge to word the RCKA Go-day ctorage rule
- Deine will submit when a tre by 11-1-80

SWW -TC.

LITTO OLEKATION - PLECIAL ENVESTIGATION Subject of Investigation: Date of Investigation: Hannah Marine Corporation March 13, 1981 Rte. 83 & 171 Mr. Dino Fabbre - Terminal Mgr. Lemont, Illinois F.I.D. #36260899400 Originated by: Main Person Date Time Main Office Clean Streams Trt. Plant Surveillance Local Authority Other Type of Complaint: Waterway ( ) Other (x) Sewer () Sludge removal Supervisor Assigned: Water Samplers: R. Sustich R. Kaufmann None Sample Photographs (3) Additional Information Attached The writer, accompanied by R. Kaufmann - PCO II, visited the **INVESTIGATION:** subject company on March 13, 1981 to conduct a progress inspection with regard to cleanup operations of waste lagoons. Investigators contacted Mr. Dino Fabbre, Terminal Manager, upon arrival. Inspection of the east lagoon area revealed that the clean-up in that area is essentially complete and that active operations are no longer required. The west lagoon has now been dewatered and divided into two smaller areas, each of which will be underdrained with perforated PVC pipe. The company has cut a main drainage trench and is preparing to lay the pipe at this time. The company also plans to regrade the entire area after the pipe is installed. Investigators will inspect the site after the pipe has been laid and again after surface regrading. Photos: 3 No samples.

049

Reviewed:

RS/hg

	FID He are confident
DATE	OF INSPECTION: 8/27/81 FID #: 362 60 8994
COMP	ANY REPRESENTATIVE CONTACTED: Deno V. Fabbre
	INFORMATION OBTAINED
1.	Description of pretreatment system: Barge cleaning - oil separation
2.	Types of sludge and process residues generated for disposal, including strippers and cleaners (specify constituents):
	Waste oils and waste caustic water from barge cleaning operations.
3.	Volume of sludge and process residues generated (per day, per week, etc.): Approx. 25,000 gals. caustic waste water/mo.
	0il 40,000 gal. 3 to 4 mos.
4.	Frequency of removal: Caustic - daily 0il - bi-weekly
5.	Method of removal (specify drums, tank truck, etc.): Tank trucks (both)
6.	Volume of sludge stored on Company's premises (specify type of container drums, tank, etc.): 0il tank - 60,000 qal. tank -
	6 to 10,000 gal. on hand Caustic water - 1,000,000 gal. tank - 300,000 gal. on hand
7.	Location of sludge storage: In yard (see sketch)
8.	Name of sludge hauler: Pierce Oil (waste oil) Chemical Waste Mgt. (water) CID
9.	Sludge disposal site: Pierce - Springfield
10.	Does Company have an adequate supply of Manifest forms? Yes X No
11.	General remarks: two former lagoons cleaned up - has sump pits to catch
	remaining ground wastes.
Revi	ewed by: Pry factness Inspectation PCO 1, D. Swets

# THE METROPOLITAN SANITARY DISTRICT OF GREATER CHICAGO

# INDUSTRIAL WASTE CONTROL PLANT SUMMARY

Date 8/27/81
No. of Employees 32
Title Mgr Shipyard Oprs.
ir
for washing barges
luction: Water intake -
tic water to large holding tank
· · · · · · · · · · · · · · · · · · ·
oils, caustic wash water.
<del></del>
Other Pierce Oil/Chemical
Pierce Oil, Springfield
Mearly
Cooling
ing Towers
systems/How
. Sewer Entering
Discharged To: NOVE
The state of the s
xplosimeter Test: No
ubmitted: Yes
rubiiit cced. <u>les</u>
9/1/81
7/ 1//)

# AN SANITARY DISTRICT OF GREATER CHICAGO INDUSTRIAL WASTE DIVISION

# REPORT OF FLAMMABLE - VOLATILE - EXPLOSIVE - CORROSIVE MATERIALS

COMPANY NAME Hannah Marine Co	rp.	
LOCATION OF FACILITY Kingery	Rd. at Archer Ave., Lemont, 11 6043	19
PERSON TO CONTACT/EMERGENCY De	no V. Fabbre	
PHONE # - DAY HOURS 242-3210		
SPECIFIC NAME OF MATERIAL (Please Print or Type)	STORED IN (Underground tank - 55 gal. drums in fireproof room, etc.)	QUANTITY MAX. Amount on hand
GASOLINE - No Lead	10,000 gal. Tank Sprface	10,000 gal.
- Regular	8,000 gal. Tank Surface	8,000 gal.
FUEL OIL #6	8,000 gal. Tank Surface	8,000 gal.
11	(2) 10,000 underground (2 way)	20,000 gal.
LUBE OIL & HYDRAULIC	50 - 55 gal. drums	2,750 gal.
No diesel fuel	,	
	·	
TANKS - TRANSFER LINES, ETC., CH	ECKED FOR LEAKS: YES X	NO
DATE OF TEST May 1981 . RE	<del></del>	
DRAINAGE SYSTEM OF UNDERGROUND F		
	STORM	
REPORT PREPARED BY: Follow		1-8/
<b>*</b>		
(to be fi	<del>-</del>	
STORM SEWER & CREEK/RIVER - DISC	•	
LOCAL SANITARY SYSTEM DISCHARGED		
MSDGC PLANT DISCHARGED TO: N/A	VIA INTER. SEWE	CRN/A
REMARKS:		
	055	9/1/81
	D. Swet	

Please return to: MSDGC, Industrial Waste Division 100 East Erie Street

Chicago, Illinois 60611

# CONCILIATION AGREEMENT

This AGREEMENT, entered into by and between the SANITARY DISTRICT OF GREATER CHICAGO, a Munic	cipal Corporation,	VIOLATION NOTICE#	82-167
organized and existing under and by virtue of State of Illinois, hereinafter called the "DI	STRICT" and	HEARING DATE	3/22/82
Hannah Marine Corp., Kingery FID: 362608994	Rd. at Archer Ave	., Lemont,	I11. 60439
hereinafter called the "COMPANY":			
MSD Treatment Plant <u>Calumet</u> MAIleged Violations <u>Art. 1V Sec. 3 - SI</u>	SD Waterway Ludge Reporting		
WHEREAS it has been alleged that the COMPANY pollution laws contained in the Sewage and Wa conciliate; NOW, THEREFORE, it is agreed that	ste Control Ordinance	; WHEREAS pa	arties agree to
Co. was unaware that the wast had a market value and were had agrees to manifest these mate	peing sold rather	anifesting than dispo	s as they psed. Co.
Co. estimates they generate of is removed every 3 months. Staken to their plant in Springstates they are in compliance	This is picked up	by Pierce use as fue	Oil and el. Co.
•			
		·	
·			
COMPLIANCE DATE: 3/22/82			
E. Mold	Cre-MA		·
Hearing Officer (s)  E. Field	Company Representati Carl Lambert, Mgr Deno Fabbre, Mgr.	Safety 8	

057

# Subject of Investigation:

Date of Investigation:

Hannah Marine Corp. Rts. 82 & 171

June 25, 1982

Rts. 82 & 171 Lemont, Illinois FID #362 780 828

Originated by:	Main Office	$\mathbf{y} = \mathbf{y}$
Trt. Plant	Clean Strea	ams O
Other	Local Author	ority
Type of Compla	aint:	
Waterway (X)	Sewer ()	Other (

Person	<u>Date</u>	Time
J. Tomaras	6/18/82	
E. Field	4/23/82	

Supervisor Assigned:

Water Samplers:

James E. Figlewicz

Gieseman, Sheridan, Lane

Sample 🔇	Photographs 🔘	Additional Information Attached	0

## INVESTIGATION:

The writer, accompanied by D. Swets, PCO-I, visited the facility on June 25, 1982, to conduct an inspection with regard to new installation of old storage tanks on the property. Investigators met with Mr. Vaden Robertson, Yard Superintendent.

Inspection confirmed addition of three 20,000 gallon storage tanks to company's property. The tanks were purchased from Material Service (yard number unknown). These tanks have been cleaned and contain no residues. At present, company has no plans to install these tanks in the foreseeable future due to lack of finances. The tanks will probably be used to store wash water generated from plant operations. Company will install regulation pads and clay berms before the tanks are put into operation. Company is in the process of obtaining building and installation permits and will inform the MSD before installation of the tanks occurs.

In regard to Violation #82-121, a compliance inspection was conducted of the company's private treatment plant. Compliance date was May 21, 1982.

Inspection revealed that the chlorinator has been moved to the north side of

Station #1B. A check of the effluent showed the pH to be between 8-9, which

bleached out rapidly; a strong chlorine odor; clear, slightly yellow, slight sediment;

(Inv

Page 2

Special Investigation

June 25, 1982

James E. Figlewicz, PCO-I, Badge #150

Hannah Marine Corp. Rts. 83 and 171 Lemont, Illinois

and no flow was observed. Mr. Robertson stated that he would have his electrician check out the chlorinator and cut back on the proportion to be added.

Compliance sampling followed on July 15, 21 and 28. A total of nine (9) samples was taken. Samples were delivered to the WSW R & D Laboratory for the following analysis: General Chemistry and fecal coliform. A two (2) sample composite was conducted on the General Chemistry samples. Grabs were taken for fecal coliform. Surveillance will continue with normal monthly private treatment plant sampling at Station #1B.

Reviewed: Roy Cantinamo

JEF/dms

TO Kor tous	Mayan-	FROM TOMARO	2
:			
SUBJECT Homal	2 Marure	DATE 6	118182
MESSAGE Selfe	a a norma to be	trolation all	stonas
tank on a	roperty o Suspect	mos. Le male	to
Determine via	edite of tank stora	in surren . W	Rat three
of ral do	m? One cly	from ? What	are N
Tank to be	wed for ? Did.	Comman cont	rit
MSD But A	on intallation?	7 0	
	SIGNED	moran	
REPLY 1F	iglenicz 6-25-32 rep	ort attached	,
	TO STATE OF THE ST	Pay a St	7
	SIGNED	DATE	///
Radiforms 45 472	SEND PARTS 1 AND 3 WITH CARBO		entrakk 50 Sent war

Non-Rog. lated - Cond

to get a some 7-3 x21

SEPA 0438020 4 POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT PART 1 - SITE INFORMATION AND ASSESSMENT

1. IDENTIFICATION

01 STATE 02 SITE NUMBER

TL DC6 9496249

PARIL	SIIE INFUNMA	TION AND ASSESSMENT
II. SITE NAME AND LOCATION		
O1 SITE NAME (Legal, common, or descriptive name of are)		02 STREET, ROUTE NO , OR SPECIFIC LOCATION IDENTIFIER
HANNAH MARINE	CORP.	KINGERY ROAD AT ARCHER AVE
03 GTV		04 STATE 05 ZIP CODE 08 COUNTY 07 COUNTY 08 CONG CODE DIST
LEMONT	_	IL 60439 DUPAGE CH3 4
OB COORDINATES LATITUDE LONG	GTUDE	B SAG BAIDGE
10 DIRECTIONS TO SITE (Starting from nearest public road)		-
TAKE ARCHER A SIIE IS LOCAIED	RUENUE OT AK	TO MINGERY ROAD CHER AND MINGERY (ON CANAL)
HI. RESPONSIBLE PARTIES		
01 OWNER (# Anoun)		02 STREET (Business manny, readermal)
HANNAH MARINE		36/ Trostage Sel
BURR RIDGE		IL 6052/ 13/212423210
07 OPERATOR (If known and different from owner)		OB STREET (Business, making, residential)
HANNAH MARINE		KINGERY ROAD
CEMONT		10 STATE 11 ZIP CODE 12 TELEPHONE NUMBER  14. 60439 13/2124232/0
13 TYPE OF OWNERSHIP (Check and)		16. 01797 34.4723270
## A. PRIVATE   B. FEDERAL	(Agency name)	□ C. STATE □D COUNTY □ E. MUNICIPAL □ G. UNKNOWN  LED WASTE SITE (CERCLA 103 e) DATE RECEIVED. WONTH DAY YEAR
IV. CHARACTERIZATION OF POTENTIAL HAZARD		MONTH DAY YEAR
THE PROPERTY OF THE PROPERTY O		<del>_</del>
SIYES DATE 4 19182 DAE	PA B. EPA OCAL HEALTH OFFI	A CONTRACTOR 7 3. STATE D. O. OTHER CONTRACTOR
	ACTOR NAME(S):	
02 SITE STATUS/CAGES ONE)  \$ A ACTIVE   B INACTIVE   C. UNKNOWN	03 YEARS OF OPER	Z UNKNOWN
04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN,  UCLATILE (SOLE (BASI)	ORALLEGED VENTS)	REGINNING YEAR
05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND KEN VIRCUMIER	or population T = 34.RFA (S O	POR WATER) POTENTIAL RUNCES OF TL) CONTRATINGETS TO CAUPL POTENTIAL FOR SOIL CONTRIBUTE FROM TWO ONSLIE LAGGONS
V. PRIORITY ASSESSMENT		
01 PRIORITY FOR INSPECTION (Check one if high or medium is checked co	smplete Part 2 Waste Infor	mission and Part 3 - Description of Hazaroous Conditions and Incidents;
A HIGH State Colored promoting St. MEDIUM (Induction required)	C LOW	available basis) . D. NONE (Ne Author action readed: complete current disposarion form)
VI. INFORMATION AVAILABLE FROM		
01 CONTACT	02 OF IAgency Organiz	
JIM WIGGINS  04 PERSON RESPONSIBLE FOR ASSESSMENT	IEP.	A - MAY W'COD OFFECTE (3/2)3+59780
Jim Wiggins	IEPA	13/213457780 32184 MONTH DAY YEAR

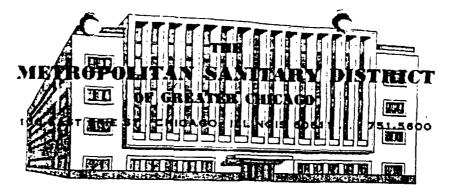
# POTENTIAL MALALLE

PRELIMINARY ASSESSMENT PART 3 · DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS				
II. HAZARDOUS CONDITION	S AND INCIDENTS			
01 .: A GROUNDWATER CO 03 POPULATION POTENTIAL	NTAMINATION	02 © OBSERVED (DATE ) 04 NARRATIVE DESCRIPTION	_ POTENTIAL	U ALLEGED
01 Z B SURFACE WATER CO	LY AFFECTED	02. TOBSERVED (DATE) 04 NARRATIVE DESCRIPTION 1AS 14AP TWO CN 5.	X POTENTIAL	
		USATE AND STUDGE F		
		TIC RINSELVATER W/O		
01 T C CONTAMINATION O 03 POPULATION POTENTIAL		02 TOBSERVEDIDATE) 04 NARRATIVE DESCRIPTION	. POTENTIAL	C ALLEGED
01 TO FIRE EXPLOSIVE CO	ONDITIONS LY AFFECTED	02 - OBSERVED (DATE) 04 NARRATIVE DESCRIPTION	_ POTENTIAL	J ALLEGED
01 TE DIRECT CONTACT 03 POPULATION POTENTIAL	LY AFFECTED	02 C OBSERVED (DATE) 04 NARRATIVE DESCRIPTION	C POTENTIAL	ALLEGED
01 X F CONTAMINATION OF		02 TOBSERVED (DATE) 04 NARRATIVE DESCRIPTION	X POTENTIAL	ALLEGED
		OR SOIL CONTAGIA ON OF TWO LAGOO		=R CM
01 _ G DRINKING WATER CO 03 POPULATION POTENTIALI		02 - OBSERVED (DATE	_ POTENTIAL	. ALLEGED
01 M WORKER EXPOSUR 03 WORKERS POTENTIALLY	EINJURY  AFFECTED.	02 F. OBSERVED (DATE) 04 NARRATIVE DESCRIPTION	U POTENTIAL	. ALLEGED
01 . I POPULATION EXPOSE 03 POPULATION POTENTIALI		02 .; OBSERVED (DATE) 04 NARRATIVE DESCRIPTION	D POTENTIAL	C ALLEGED

EPA FORM 2070-12(7 41)







BOARD OF COMMISSIONERS JOANNE H ALTER THOMAS S FULLER NELLIE L. JONES GLORIA MAJEWSKI NICHOLAS J. MELAS AURELIA PUCINSKI RICHARD & TROY LOUIS & VIVERITO

# NOTICE OF VIOLATION

THE METROPOLITAN SANITARY DISTRICT OF GREATER CHICAGO )

VIOLATION NO. 86-074C

vs.

WATERWAY

HANNAH MARINE

Mr. David E. Updegraff TO: Manager Exec. Vice.

Facility: Route 171 and Route 83 Lemont, Illinois 60439

Resource Planning 361 Frontage Road

Suite 101

Burr Ridge, Illinois 60521

Investigation has revealed that you have violated Appendix A of the Sewage and Waste Control Ordinance of the Metropolitan Sanitary District of Greater Chicago and the applicable Illinois law pertaining to pollution. Your violation consists of: discharging an effluent with excessive concentrations of suspended solids (3088 mg/l), iron (18.3 mg/l) and with high pH value (9.2) into the Chicago Sanitary and Ship Canal, based on a grab sample taken at 11:45 a.m. on January 23, 1986.

An owner or an officer of the respondent, authorized to legally bind the respondent, is directed to appear at the Industrial Waste Division, Enforcement Section, Third Floor, at 111 East Erie Street, Chicago, Illinois, on March 24, 1986 at 2:00 p.m. conciliation meeting, to discuss and attempt to resolve the violation and to submit, at that time, a plan and schedule for compliance. Direct phone inquiries should be made to Joseph Wadz at 751-3047.

THESE PROCEEDINGS ARE TECHNICAL AND NON-ADVERSARY IN NATURE. ANYONE AP-PEARING PURSUANT HERETO MAY APPEAR WITH LEGAL AND/OR TECHNICAL COUNSEL: YOUR FAIL-URE TO APPEAR IN RESPONSE TO THIS NOTICE WILL SUBJECT YOU TO SUCH LEGAL ACTION AND SANCTIONS AS ARE PROVIDED BY LAW.

> Witnessed: March 10, 1986 The Metropolitan Sanitary District of Greater Chicago Frank E. Dalton, General Superintendent

Jarome Tobias Chief Enforcement Officer

CLE:JW: 1g/ CLH:RL:AMS:JT:JW:lg

PREPARED BY:

Cecil Lue-Hing, D.Sc., P.E.

Director

Research and Development

063

BY:

# CONCILIATION AGREEMENT

SANITARY DISTRICT OF GREATER CHICAGO, a Municipal Conganized and existing under and by virtue of the lost tate of Illinois, hereinafter called the "DISTRICT"	orporation, aws of the	NOTICE# HEARING DATE	1 1 3/24/86
Hannah Marine, Rt. 171 & 83, Lemont, hereinafter called the "COMPANY":	<u>[L</u>		
MSD Treatment Plant MSD Water Alleged Violations Suspended solids, iron, his		Sanitary	& Ship Canal
WHEREAS it has been alleged that the COMPANY has been pollution laws contained in the Sewage and Waste Concolliate; NOW, THEREFORE, it is agreed that the CO	itrol Ordinance	; WHEREAS p	arties agree to
Company reports that they had recently room sewers, suspects high readings do not explain high pH.			
Company states that, to the best of the cleaning wastewaters are discharged, hauled away.			
Company submitted analysis of recent of in compliance.	ırab samples	, 5 most r	ecent
Company will return on 4/22/86 at 10:00 layout/sewer dxxxxxxxxx drawing, showing treatment and septic systems, verifying Company will also investigate source of	g location of ng what disch	f barge cl	eaning,
COMPLIANCE DATE:			
· · · · · · · · · · · · · · · · · · ·	y Representati		
D. Ur	odegraff, Exe	ec. Vice P	res.

TO: DEU

FROM: JCB

DATE: March 31, 1986

SUBJ: SHIPYARD SEWAGE TREATMENT

The 3" sewer lines come from the mens and ladies washrooms and the 6" sewer line comes from the shop washroom. All of these lines connect to the sewer macerator which in turn flows into the septic tank field, from there to the hypochlorinator, where the grab samples are taken, and then to the Chicago Sanitary and Ship Canal.

All of these lines are segregated lines and used only for the sewer system. At no time does Hannah Marine Corporation discharge barge cleaning waste water into the sewer system or the waterway. All barge waste water is removed from the premises via licensed waste haulers and is properly manifested.

The high ph reading that showed up in the January, 1986 report was due to the malfunction of our shop sewer which was plugged and in turn, trapped our employee hand soap detergent so that when our sewer was rodded out, this released the soap detergent at one time and in turn gave us the high ph reading.

For as you can well see by the analysis that we submitted of our recent grab samples, we were in compliance, which shows that our chlorination system is in good working order.

Enclosed you will find two schematic drawings of the sewage treatment system.

JCB/da

Encl

# CONCILIATION AGREEMENT

This AGREEMENT, entered into by and between the METROPOLITAN	V
SANITARY DISTRICT OF GREATER CHICAGO, a Municipal Corporation,	N
organized and existing under and by virtue of the laws of the	H
State of Illinois, hereinafter called the "DISTRICT" and	D

VIOLATION	86-074C	
NOTICE#	, 1	
HEARING	2	_
DATE	4-22-86	

State of Illinois, hereinafter called the "DISTRICT" and	DATE	4-22-86
Hannah Marine, Rt. 171 & 83, Lemont, IL.		
hereinafter called the "COMPANY":		
MSD Treatment Plant Alleged Violations Suspended solids, iron, high pH	o Sanitar	y & Ship Canal
WHEREAS it has been alleged that the COMPANY has been and/or is pollution laws contained in the Sewage and Waste Control Ordinanc conciliate; NOW, THEREFORE, it is agreed that the COMPANY will at	e; WHEREAS	parties agree to
Company furnished requested drawings, states PTP dis- sanitary wastes from office and shop washroom and sho cleaning wastewater is hauled away and manifested.		
Regarding the high pH, company believes was caused by soap detergent during the recent sewer unplugging, a sample taken after the unplugging and before MSD's so normal pH. Subsequent Company's samples indicate company's	lthough a ample sho	. company wed
		·
COMPLIANCE DATE: 4-22-86		
	/	

Hearing Officer (s)

O Wadz

Company Representative (s)
D. Updegreaf, Exec. Vice President

ib

# THE METROPOLITAN SANITARY DISTRICT OF GREATER CHICAGO

DEPARTMENT: Research & Development

DATE: 2/23/87 ...

TO:

James T. Dencek, PCO IV

FROM:

James E. Figlewicz, PCO I

SUBJECT:

HANNAH MARINE Routes 83 & 171 Lemont, Illinois

The subject facility was sampled on February 11, 18, 19, and 20, 1987. This was in regards to Violation #86-074C, for Suspended Solids, Iron, and high pH, with a compliance date of April 22, 1986. Also Violation #86-416C for BOD with no compliance date on file.

A low pH of 3 was observed on February 11. Mr. George Vosava, of this facility, stated on February 18, that there had been an equipment breakdown on February 11. This breakdown had caused the low pH condition. Repairs had been made immediately, which corrected the pH problem.

Grab samples from Station #1B, at this Private Treatment Plant, preserved and delivered to the WSW Lab. Parameters analyzed for were General Chemistry, Cyanide, Phenol, FOG, and Trace Metals.

Total Samples: 20

James E. Figlewicz, P&O I

Reviewed:

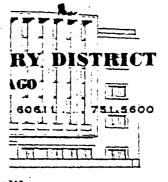
POSTMARK OR DATE

RECEIPT FOR CERTIFIE

NO INSURANCE COVERAGE PROVIDE

NO INSURANCE COVERAGE PROVIDE

SENT TO



BOARD OF COMMISSIONERS
JOANNE H. ALTER
THOMAS S. FULLER
NELLIE L. JONES
JAMES C. KIRIE
GLORIA ALITTO MAJEWSKI
NICHOLAS J. MELAS
AURELIA PUCINSKI
NANCY DREW SHEEHAN
RICHARD J. TROY

MC PS Form 3800, Apr. 1976

THE METROPOLITAN SANITARY DISTRICT OF GREATER CHICAGO

vs.

HANNAH MARINE CORPORATION

VIOLATION NO. 87-112C

WATERWAY

THIRD VIOLATION

TO: Mr. David E. Updegraff
Executive Vice President
361 Frontage Road
Suite 101
Burr Ridge, Illinois 60521

Facility: Route 171 and Route 83 Lemont, Illinois 60439

Investigation has revealed that you have violated Appendix A of the Sewage and Waste Control Ordinance of the Metropolitan Sanitary District of Greater Chicago and the applicable Illinois law pertaining to pollution. Your violation consists of: discharging an effluent with high pH (9.7) and with an excessive concentration of suspended solids (964 mg/L) into the Chicago Sanitary and Ship Canal, based on a grab sample taken at 10:05 a.m. on February 11, 1987.

An owner or an officer of the respondent, authorized to legally bind the respondent, is directed to appear at the Industrial Waste Division, Enforcement Section, Third Floor, at 111 East Erie Street, Chicago, Illinois, on April 9, 1987 at 2:00 p.m. for a conciliation meeting, to discuss and attempt to resolve the violation and to submit, at that time, a plan and schedule for compliance. Direct phone inquiries should be made to Rion Klawinski at 751-3047.

THESE PROCEEDINGS ARE TECHNICAL AND NON-ADVERSARY IN NATURE. ANYONE APPEARING PURSUANT HERETO MAY APPEAR WITH LEGAL AND/OR TECHNICAL COUNSEL. YOUR FAILURE TO APPEAR IN RESPONSE TO THIS NOTICE WILL SUBJECT YOU TO SUCH LEGAL ACTION
AND SANCTIONS AS ARE PROVIDED BY LAW.

Witnessed: March 20, 1987
The Metropolitan Sanitary District
of Greater Chicago
Frank E. Dalton, General Superintendent

BY

Cecil Lue-Hing, D.Sc., P.E.

Director

Research and Development

PREPARED BY:

Jerome Tobias
Chief Enforcement Officer
CLH. Tu. 14

# INTERVIEW NOTES: JOHN DOE 4/2/87 PREVIOUS EMPLOYEE OF HANNAH MARINE LEMONT, ILLINOIS

April 2, 1987 1400 Hours

#### Confidential Source

#### Barge Cleaning Operations

- 1. Bring Barge in
- 2. Decide if would save product resold
- 3. If not, proceed directly to cleaning as follows:
  High pressure wash, sometimes with caustic (NaOH).
  Hang two Butterworth machines (spinners) inside,
  25-45 minutes per compartment.

Are either pumping liquid out or operating with vacuum.

3-10 compartments per barge, 12,000 gallons waste water per compartment generated if relatively clean.

Then ventillate and inspect.

Solids were drummed and shipped to a landfill - infrequent; asphalt barge.

Mid-70s took to Atlantic Richfield and had it run through waste separation system.

Pre RCRA waste water shipped to ARCO Refinery (East Chicago).

#### Clientelle

Hannah cleaned their own barges, plus outside barge lines; 40% outside companies to 74/75, increasing up to 65 or 70%.

#### Barge contents

#### Hannah Barges:

- 1. Fuel oils all numbers
- 2. asphalt
- 3. gasoline
- 4. NaOH
- 5. Benzene
- 6. Toluene from gas breakdown?
- 7. Alkalids (soap stock) (alkylbenzene)
- 8. Fertilizer pollutions

#### Outside Barges:

Anything on the river -- were no other barge cleaning ops until Petrochem in the late 70's.

#### Resale of Good Product

If using a 10<sup>6</sup> gallon pump, have about 500-1000 gallons good product left in the barge.

Typical customers - oil recyclers

### Barge lines cleaned for

Great Lakes region.

Were only operation until late 70's (Petrochem (77)) and are again, in this area.

#### Other operations

Welded.

Sand blasted and painted.

#### Site History

In business since 1918.

Intimated purchase of Inland Waterways in 1948 as explanation of Incorporation Documents.

Though early MSD sampling ('71 or so) was only for sanitary waste treatment system, a steam boiler has been on site since initial operations.

Though Hannah presumably treated sanitary wastes in their early years, prior to '70 was a straight pipe discharge. This was a separate system from the other Cavitat system.

Bonafide disposal lagoons and discharges to Canal occurred pre-70. What EPA required removal action for in '78/'79 was area where waste water was stored prior to transport for off-site disposal.

#### John Doe Association

Worked for Hannah Marine from 1970-78/79.

Responsible for maintaining the barges mechanically

- 1. 1 1/2 years as purchasing agent (parts and supplies) and barge superintendant.
- Manager of engineering (maintenance).
   Was most involved with cleaning in '73/'74

#### Ownership of Barge operations

Donald, President, is father of Daryl Hannah.

Donald's father began operations in 1918.

previously owned the largest trucking operation in IL.

Died a few years ago.

#### Dumping Incidents

Seemed to be aware of Willow Spring Road/Rte '83 incident.
Implied this was not an unusual occurance.

# INTERVIEW NOTES: AL GIDREITAS AND RICH SUSTRICH 4/14/87

EMPLOYEES OF MSDGC
PRPS SEARCH - HANNAH MARINE
LEMONT, ILLINOIS

April 14, 1987

Al Gidreitas Pollution Control Officer -3 Industrial Waste Division MSDGC

Rich Sustrich Pollution Control Officer - 2 Industrial Waste Division MSDGC

AG has been involved with site on the management level. RS was active at the site during the IEPA removal reaction.

## Lagoons

Were two ponds and a small, deep pit used for disposal of contaminated barge cleaning waters.

Ponds were used for disposal/evaporation of volatiles, not as a holding area.

Large pond held approximately 150,000 gallons - high in xylenes; 50,000 in other.

Disposed of approximately 100,000 gallons per annum in the ponds.

Could see run off from smaller pond to the I & M Canal.

Suspect that there are 2 or 3 previous disposal layers below what the IEPA removed.

Could possibly be an old quarry.

At 15 feet down, are large smooth boulders.

Both ponds had a high pH.

## Site Initiation/Removal Action

Private citizen observed lagoons from the bridge on Rte. 83. Noted run off to the I & M Canal.

Hannah Marine paid approximately \$300,000 for removal action.

Sumps installed at approximately 15 feet. One extracted oil identified as the same oil in I & M Canal.

Monitoring wells installed at 12 feet.

Sludge remained in west pond after removal action with 40% LEL (10,000 ft<sup>3</sup>).

Removed one load of liquids - Hannah Marine claimed 95,000 gallons evaporated.

# Waste Streams Generated/Storage Facilities

25,000 gallons caustic waste/month
40,000 gallons oil/3-4 months
60,000 gallon storage tank
1,000,000 gallon caustic water tank/separator.
Recycled cleaning water in separator/oil skimmer.
Levels of toluene, etc. too high to be breakdown from gasoline.

# PTP (Private Treatment Plant)

Cavitat system

Small activated sludge treatment plant Underground storage tanks with aerator Chlorinator that doesn't work very well

MSD samples to test PTP effluent, only

Thinks the boiler house condensate may also enter the effluent would require a leak for the condensate to be contaminated

Recent sampling errors - done by Special Services (of Industrial Waste Division).
PTP sampling is low priority.

## Junk Yard

Bob Bily - owner/operator.
Has history of oil problems - claims it washes down from the highway (83).
Had an oil fire last year.

## CS & SC

Last summer, after extensive rains (high water table), 100,000 gallons of old, dirty oil showed up in I & M.

## Midnight Dumping Incident

Nov. 25, 1979
Willow Spring Rd. and 83/Des Plaines River
Pool sample at river and at Hannah matched; Truck sample did not.
Handled by Willow Springs Police Dept.

# Scope of Operations

Lemont Ship Building and Repair did a limited amount of barge cleaning. Located downstream from Hannah.

Hauled for Koppers Company on Laramie St. - orthoxylene; toluene.

Other <u>suggested</u> companies: Koch Oil (formerly Gustafson Oil) Apex on Kedgie - Forest View

TriCentral Marine - Lemont

Union Carbide

GATX - warehouse for organics, oils

Dravo Meckland

All the big barge lines - had to go through there.

APPENDIX B 104(e) RESPONSE HANNAH MARINE LEMONT, ILLINOIS

# APPENDIX B

# Bibliography of 104(e) Response Documents Source: IEPA

Hannah Marine Corporation's response to U.S. EPA's requests (4/3/87)  017-104 Response No. 3 and 5: Chemical compositions of materials handled at site. (4/3/87)  114-130 Response No. 4: Volumes and dates of disposal (4/3/87)  131-172 Response No. 7: Description of barge cleaning procedures (4/3/87)  173-189 Response No. 9: List of Pollution Control Permits (4/3/87)  190-213 Response No. 10: Disposal Service receipts and logs, analyses, invoices (11/79 - 4/80)  214-227 Response No. 11: Liability insurance policies (7/14/82)  228-231 Response from Hannah regarding EPA's request for more information (5/14/87)  232-240 IEPA Waste Stream Permits: Hannah Marine Corp., generator (12/81 -17/86)	Document Nos.	Document Description
compositions of materials handled at site. (4/3/87)  114-130 Response No. 4: Volumes and dates of disposal (4/3/87)  131-172 Response No. 7: Description of barge cleaning procedures (4/3/87)  173-189 Response No. 9: List of Pollution Control Permits (4/3/87)  190-213 Response No. 10: Disposal Service receipts and logs, analyses, invoices (11/79 - 4/80)  214-227 Response No. 11: Liability insurance policies (7/14/82)  228-231 Response from Hannah regarding EPA's request for more information (5/14/87)  232-240 IEPA Waste Stream Permits: Hannah	001-012	
disposal (4/3/87)  Response No. 7: Description of barge cleaning procedures (4/3/87)  Response No. 9: List of Pollution Control Permits (4/3/87)  Response No. 10: Disposal Service receipts and logs, analyses, invoices (11/79 - 4/80)  Response No. 11: Liability insurance policies (7/14/82)  Response from Hannah regarding EPA's request for more information (5/14/87)  IEPA Waste Stream Permits: Hannah	017-104	compositions of materials handled at
cleaning procedures (4/3/87)  Response No. 9: List of Pollution Control Permits (4/3/87)  Response No. 10: Disposal Service receipts and logs, analyses, invoices (11/79 - 4/80)  Response No. 11: Liability insurance policies (7/14/82)  Response from Hannah regarding EPA's request for more information (5/14/87)  IEPA Waste Stream Permits: Hannah	114-130	
Control Permits (4/3/87)  190-213 Response No. 10: Disposal Service receipts and logs, analyses, invoices (11/79 - 4/80)  214-227 Response No. 11: Liability insurance policies (7/14/82)  228-231 Response from Hannah regarding EPA's request for more information (5/14/87)  232-240 IEPA Waste Stream Permits: Hannah	131-172	
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request for more information (5/14/87)  232-240  IEPA Waste Stream Permits: Hannah	214-227	
	228-231	
	232-240	

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A LAW PARTNERSHIP INCLUDING PROFESSIONAL CORPORATIONS

525 WEST MONROE STREET . SUITE 1600

CHICAGO, ILLINOIS 60606-3693

TELEPHONE (312) 902-5200
TELECOPIER (312) 902-1061
TELEX 298264 ATLAW UR

WRITER'S DIRECT DIAL NUMBER (312) 902-5332

IBO WEST PARK AVENUE
ELMHURST. ILLINOIS BOIZB-3307
TELEPHONE (312) 530-7070

223 EAST MONROE STREET
SPRINGFIELD ILLINOIS 62701-1126
TELERNONE (217) 753-4490

April 3, 1987

# CERTIFIED MAIL RETURN RECEIPT REQUESTED

Ms. Susan Swales (5HE-12) Waste Management Division U.S. EPA - Region V 230 South Dearborn Street Chicago, IL 60604

Re: Hannah Marine Corporation Lemont, Illinois

Dear Ms. Swales:

Hannah Marine Corporation ("Hannah") hereby responds to U.S. EPA's requests for information of January 26, 1987. Hannah has made good faith efforts to respond and has spent numerous hours in doing so. However, since the relevant time period spans about thirty-six years, not all of the information requested is available.

Hannah's responses to inquiries calling for written answers are set forth below. Documents have been forwarded to you in response to inquiries calling for a production of documents.

## Request No. 1:

1. State the name and address of the owner(s) of the land on which Hannah Marine is situated. Include any past owners/operators of the facility during the operating period.

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# Response No. 1:

1. The name and address of the owner of the land on which Hannah Marine is situated is as follows:

Metropolitan Sanitary District of Greater Chicago 100 East Erie Street Chicago, Illinois

There have been no other owners/operators since 1951.

# Request No. 2:

2. Provide copies of all shipping documents, or other business documents including receipts, relating to the transportation, storage, and/or disposal of waste materials at the above referenced site.

# Response No. 2:

2. Copies of all documents that may be responsive to this request have been sent to U.S. EPA under separate cover.

# Request No. 3:

3. Provide the generic, common or trade name and the chemical composition and character (i.e. liquid, solid, sludge) of the materials transported to, stored, and/or disposed of at the above referenced site.

# Response No. 3:

3. All information that may be responsive to this request is contained in material safety data sheets, an analysis reported by Chem-Clear (dated 6/3/82), a "Special Waste Analysis Report" by Chemical Waste Management, Inc. (dated 11/20/81), two Illinois Environmental Protection Agency ("IEPA") Special Waste Disposal Applications (dated 1/29/81 and 2/26/82, respectively),

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descriptions of certain cleaning procedures (see Response No. 7), and material submitted in Response No. 10, copies of which have been sent to U.S. EPA under separate cover.

## Request No. 4:

4. For each waste material identified above, please give the total volume in gallons for liquids and in cubic yards for solids, for which you disposed of and list the dates when disposal occurred.

# Response No. 4:

4. All information that may be responsive to this request is contained in the IEPA Generator Annual Hazardous Waste Reports for the years 1982 through and including 1986, copies of which have been sent to U.S. EPA under separate cover.

## Request No. 5:

5. Provide copies of all records, including analytical results, and material safety sheets, which indicate the chemical composition and/or chemical character of the waste material(s) transported to, stored, or disposed of at the above referenced site.

## Response No. 5:

5. All information that may be responsive to this request is contained in material safety data sheets, an analysis reported by Chem-Clear (dated 6/3/82), a "Special Waste Analysis Report" by Chemical Waste Management, Inc. (dated 11/20/81), two Illinois Environmental Protection Agency ("IEPA") Special Waste Disposal Applications (dated 1/29/81 and 2/26/82, respectively),

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descriptions of certain cleaning procedures (see Response No. 7), and material submitted in Response No. 10, copies of which have been sent to U.S. EPA under separate cover.

# Request No. 6:

. 6. Provide a detailed description of daily disposal practices at the above referenced site.

# Response No. 6:

6. The response to Request No. 6 has been combined with the response to Request No. 7, below.

# Request No. 7:

7. Provide a description of the cleaning procedures of the barges at the above referenced site.

# Response Nos. 6 and 7:

6 and 7. Hannah services barges that transport a variety of products in the Chicago area. Often, after initial unloading, the barges may still contain several hundred gallons of virgin product. Hannah removes this remaining product, if any, and/or may clean the barge.

The remaining product is removed from the barge by Hannah's vacuum system. Each respective material is placed in a separate tank and is sold. (On rare occasions, some of the product cannot be sold and is properly disposed of off-site.)

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Hannah has special equipment and skills necessary to clean barges, although barges are not necessarily cleaned each time a product is removed from a barge. Details of the cleaning process vary according to the product contained in the barge prior to cleaning. However, common elements of the process include acquiring information about the construction of the barge and the material it contained prior to cleaning, thorough inspection of the barge, steam and/or hot water application prior to human entry, and hand cleaning and additional hot water application if necessary. Detergents may also be used in the cleaning procedure.

Hannah has written descriptions or cleaning procedures for the following materials: gasoline, tallow and bean oils, methyl ethyl ketone, molasses, styrene monomer, ethylene glycol, calcium chloride, and caustic soda solution. They have been sent to U.S. EPA under separate cover.

Varying amounts of wastewater are usually generated during the procedure. The wastewater is removed from the particular compartment by a vacuum system and is transferred to a holding tank. The wastes are then removed from the tank for offsite disposal (or occasionally for sale, if the material is suitable) within about thirty days.

## Request No. 8:

8. Provide a customer/user list for the above referenced site. The list is to include available current addresses for each customer. Provide a list of all transporters using the site.

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# Response No. 8:

The customer/user list is as follows:

American Commercial Barge Line Canal Barge Company 1701 E. Market Street Jeffersonville, IN 47130

Apex Oil Company 4801 South Harlem Forest View, IL 60402

Apex Towing Company Chotin Transportation 11301 Olive Street Road P.O. Box 3018 St. Louis, MO 63141 Baton Rouge, LA 70821

Best Foods Units of CPC 2816 S. Kilbourn Avenue Chicago, IL 60623

Bigane Vessel Fueling Company Diamond Shamrock Corp. 3583 Archer Avenue Chicago, IL 60609

Borg-Warner Chemicals P.O. Box 658 Ottawa, IL 61350

Brent Towing Co., Inc. Lake Ferguson Industrial Harbor Greenville, MS 38701

Dow Chemical-Texas Division Koch Carbon Building A-2813 P.O. Box 2219 Freeport, TX 77541

Dravo Mechling Corp. P.O. Box 52189 400 Poydras Building New Orleans, LA 70152-2189

Baton Rouge, LA 70821

P.O. Box 198 Channahon, IL 60410

Cargo Carriers, Inc. Box 9300 Minneapolis, MN 55440

Conti Carriers Foot of Davis & Ferry Road E. Carondelet, IL 62240

> 1149 Ellsworth Drive P.O. Box 1000 Pasadena, TX 77501

Dixie Carriers, Inc. 2266 Peters Road Harvey, LA 70058

> Dow Chemical Company P.O. Box 500 River Road Plaquemine, LA 70764

Wichita, KS 67201

LCP Chemicals P.O. Box J Monsville, WV 26041

Exxon Shipping Company Material Service Company 3901 Scenic Highway P.O. Box 188 Lockport, IL 60441

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Federal Barge Lines Midland Affiliated Cos. Midwest Tankerman P.O. Box 1460 Cincinnati, OH 45201

Goodrich, B.F. P.O. Box 527 Calvert City, KY 42029

Ingram Barge Company 4304 Harding Road Nashville, TN 37202

K.A. Steel Chemicals, Inc. Northern Petrochemical 1001 Main Street Lemont, IL 60439

Occidental Chemical Corp.

Hooker Chemical Center

360 Rainbow Boulevard, So.

Niagra Falls NV 14202

Lemont, IL 6043 Niagra Falls, NY 14302

Ohio River Company P.O. Box 1460 580 Building Cincinnati, OH 45202

Ole Man River Towing P.O. Box 186 Vicksburg, MS 39180

PPG Industries P.O. Box 1000 Lake Charles, LA 70602

Riverway Barge Company United Chemical Products 7703 Normandale Rd. Room 110 1036 N. Capital Avenue Minneapolis, MN 55435 Indianapolis, IN 46204

111 West Port Plaza, Suite 716 P.O. Box 7610 St. Louis, MO 63141

SC&NO Barge Line, Inc. 12680 Olive Street Road St. Louis, MO 63141

P.O. Box 323 Lockport, IL 60441

Mobil Oil Company 10123 Corporate Square Dr. St. Louis, MO 63132

National Marine Service, Inc. 1750 Brentwood Boulevard St. Louis, MO 63144

Box 459 Morris, IL 60450

P.O. Box 352 Lemont, IL 60439

Smith, Arthur Co. 8919 Interchange Drive Houston, TX 77054

Stolt-Nielsen Inc. 8 South Shore Drive P.O. Box 2300 Greenwich, CT 06836

Union Carbide Corporation P.O. Box 8008 Charleston, WV 25303

Union Oil of California Schaumburg, IL 60196

Valley Barge Line 529 N. Chicago Street Joliet, IL 60432

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The transporter list is as follows:

Mr. Frank, Inc. 201 W. 155th Street South Holland, IL 60473

Custom Blended Oils P.O. Box 41 Peotone, IL 60468

Reliable Liquid Control Corp. 7700 W. 88th Street Bridgeview, IL 60455

B & W Chemical 2250 W. 47th Avenue Gary, IN 46408

Viking Associates, Inc. 1530 N. Broadway Joliet, IL 60435 Leader Industries 2000 Bombey Road, Suite 14 Portage, IN 46368

Chicago Tank Cleaners Route 6 Box 256 Lockport, IL 60441 Denver Nettles 1148 Denver Drive Carpentersville, IL

Liquid Dynamics 655 E. 114th Street Chicag, IL 60628 All American Tank Cleaners P.O. Box 129 Willow Springs, IL 60480

American Energy 2000 Dombey Road Portage, IN 46368

# Request No. 9:

9. Provide a list of all pollution control permits obtained for the above referenced site (NPDES, RCRA).

## Response No. 9:

IEPA has issued the following waste stream permits for

### Hannah:

No. 960608

Issued to: Century Oil, Inc.

13005 Hamlin Court

Alsip, Illinois 60658

For: waste product

- No. 996032

Issued to: Chem-Clear, Inc.

11800 S. Stony Island Avenue

Chicago, Illinois 60617

For: caustic waste water

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- No. 000052

Issued to: Chem-Clear, Inc.

11800 S. Stony Island Avenue Chicago, Illinois 60617

For: waste from cleaning of tanks and equipment.

- No. 921838

Issued to: Liquid Dynamics

655 E. 114th Street

Chicago, Illinois 60628

For: contaminated diluted caustic

- No. 921156

Issued to: CID Corp.

P.O. Box 1306

Calumet City, Illinois 60409

For: contaminated diluted caustic water

No. 820507

Issued to: CID Corp.

P.O. Box 1306

Calumet City, Illinois 60409

For: caustic waste water

- No. 996032

Issued to: Chem-Clear, Inc.

11800 S. Stony Island

Chicago, Illinois 60617

For: caustic waste water

- No. 800302

Issued to: Chemical Waste Management of Illinois

P.O. Box 1296

Calumet City, Illinois 60409

For: caustic waste water

- No. 995677

Issued to: American Recovery

Riley Road

East Chicago, Indiana 46312

For: waste hydrocarbons

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IEPA has also issued special waste hauling permits to Hannah for the years 1981 and 1983 through 1987. Each bears the number 0986. Copies of those permits have been sent to U.S. EPA under separate cover. (Presumably, a permit was also issued for 1982, but it cannot be located.)

# Request No. 10:

10. Provide a description and map of all lagoons, evaporation ponds, and discharge points (opened or closed) at the above referenced site.

# Response No. 10:

A diagram of the site displaying the requested information has been sent to U.S. EPA under separate cover. The diagram indicates former "evaporation ponds." The evaporation ponds are no longer on the facility. They were removed under the direction of the Metropolitan Sanitary District in 1979. The actual removal was performed by Browning-Ferris Industries. All documents relating to the removal have also been sent to U.S. EPA.

# Request No. 11:

11. Provide a list and description of all liability insurance coverage that is or was carried by you, including any self-insurance provisions that relate to hazardous substances and/or the facility identified above, and copies of all these insurance policies.

# Response No. 11:

Copies of Hannah's insurance policies have been sent to U.S. EPA under separate cover. They are as follows:

- Fireman's Fund, Policy No. 2-64-MXP-457-73-65 Policy Period 7/14/82 to 6/9/85
- Fireman's Fund, Policy No. 2-64-MXX-80079578 Policy Period 6/9/85 to 6/9/86
- Fireman's Fund, Policy No. 2-64-MXX-80139960 Policy Period 6/9/86 to 6/9/87
- A \$5 million umbrella policy is currently in effect for the facility. Efforts are being made to locate a copy of the facility, and will be submitted to U.S. EPA when it is obtained.

Hannah Marine has made all reasonable efforts to answer each request as fully as possible. However, the definition of "waste materials" in the January 26, 1987 information request is exceedingly broad and does not comport with any definition under the Resource Conservation and Recovery Act, 42 U.S.C. §6901 et seq., as amended, or the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. 9601 et seq., as amended, or any regulations thereunder. No response to the request is intended to be an admission that U.S. EPA is lawfully entitled to the information it has requested, or that any particular action by Hannah subjects it to any statutory, regulatory, or other requirement, and shall not be so understood.

The written statements submitted pursuant to the January 1987 request will be notarized and submitted under the signature of a duly authorized corporate official (who is currently not in the continental United States) certifying that all information contained in such statements is true and accurate to the best of the signatory's knowledge and belief, that a diligent search for all documents responsive to the request has been completed (except as noted), and that all documents submitted to Region V pursuant to the information request are true and authentic to the best of the signatory's knowledge and belief. However, neither 42 U.S.C. §9604(e), nor 42 U.S.C. §6927 contains a requirement for such a signature or certification. Hannah's agreement to provide the signature and certification is not intended to be an admission that U.S. EPA has the authority to require them, or that Hannah is subject to any statutory, regulatory, or other requirement, and shall not be so understood. Hannah waives no rights in responding to the information request.

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Should you have any questions about this response, kindly contact me at the above number. Thank you for your cooperation.

Very truly yours,

(ANEY W. KOYEMANIN

Carey S. Rosemarin

CSR/kp

RESPONSE NO. 3 & NO. 5

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5. PRUTECTIVE MEASURES IN HAUS

Avoid prolonged contact with skin.

## 6. SPILL AND/OR EMERGENCY PROCEDURES

Shul-off all lines involved in the emergency that are readily accessible.

Notify plant operations officer.

Notify U.S. Coast Guard and loc 1 health and pollution control agencies, if required.

# 7. SPILL TREATMENT REQUIREMENTS

Pump off spilled material to or tainment. Flush residual with water.

## E. COMPATIBILITY WITH MATERIAL

a. Compatibility with:

Steel - compatit e

Aluminum

brass - moncomo: \_ible

Stainless Steel - compatilie

Compatibility Chart No.

honcompatible with copper and zinc/containing alloys.

b. Preferred Materials for:

Tanks - steel

. Pipes - all iron

Pumps - cast steel

Hoses - polyethylene crosslinked

Gaskets - JY-60

#### 9. STORAGE CONSIDERATIONS

Venting: Std. pressure-vecuum ments mandatory on fixed roof tanks.
Since this is an equeous solution, precaution should be taken to prevent freezing at temperatures below and to minimize corrosion at the surface-air interface, an oil layer may be floated on too.

To minimize corrosion at the surface-air interface, an oil layer may be floated on tob. May dry and leave solid denosit on valves, pumps, etc. that may be corrosive or explosive if it tecrn-by poinc through a series of the perature cycles to 90°F or higher followed by cooling below this transfer to prevent this, all leaks must be stopped and all denosits must be flushed off by a water hose test.

# 10. LABELING REQUIREMENTS

# 11. CLEANING PROCEDURES

I main tank, flush with water, remove solution.

CD\_A

(Details of the cleaning procedure are given in Appendix)

#### 12. MISCELLANEOUS

The 32 in the name refers to the percentage by weight of available mitrogen as fertilizer.

019

Compiled by: P. Budininkas

Hate: January, 1980 Revised by:

Date:



1. COMMODITY

# CREOSOTE -

BIGNAL WORD DANGER

COLEANN SYNONYMS AND TRADE NAMES

Ereosote oll Coal ter Mood creosote DESCRIPTION

Colorless or yellow, oily liquid.

CREMICAL FORMULA

A mixture of phenols from coal tar.

MOLECULAR WEIGHT

THE PERSON TOWNS IN

2.5 psia (129 mm Hg) 9

71.70 psia (569 mm. Hg) @

2. PHYSICAL PROPERTIES

Freezing Point: PF ( PC)

Boiling Point: 392-482°F (200-250°C)

Density (Spec. Gravity) at 58°F (20°C): 8.9 Tbs/gal (1.07 )

Kinematic Viscosity, at 77°F (25°C): SSU 52 ( 8 eSt) (approx.)

at of ( oc): SSU ( ESt)

at 68°F (20°C) D.01 psia (0.5 mm Hg)

Solubility in Water, 1: approximately 2

Solubility of Water in Commodity, I: Less than 1

Vapor Pressure: 1.5 psia [77.8 mm Hg] ?

Specific Heat, Btu/lb. F. [cal/g T): Approx. -0.62

Coefficient of Thermal Expansion: per of C.0004 Approx.

per C 0.0008 Approx.

2. HAZARD DATA -

Flashpoint: 165 年 ( 34 °C) &C

Flammability Limits in Air. Volume X:

Autoignition Temperature: 637 PF (336 PC)

Threshold Limit Value [TLV), ppm: 5 (estimated)

Short-Term John Lation Limits:

Odor Threshold, ppm: 5 (estimated)

NFPA

HEZETE Classification (Estimated)

P()

P( ]

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SF 1

Flammability

4. HAZARD ACTION

FIRE

Combustible. Poisonous gases produced in fire. Wear goggles, self-contained breathing apparatus, and mubber overclothing, gloves. Extinguish with water, dry chamical, alcohol foam, or carbon dioxide. Loui exposed containers with water. ---

	- 7	HARM	1 ACTION
·-·-	THÂLED	Poisonous if innaled at high concentrations. Causes weakness, headache, dimness of vision, difficult breathing, mental confusion. Collapse and death may occur in a few minutes of massive exposure.	Move to fresh air.  If breathing is difficult, give  If breathing has stopped, administer  artificial respiration
EXPOSURE	<b>SWALLOWED</b>	Poisonous if swallowed. Will cause severe corrosion of mouth, throat and stomach, even perforation. Also symptoms as inhaled. About 1 lesspoonfull may cause death.	Do NOT induce vomiting
	ON SKIN	Causes severe burns.  Produces no immediate pain; only skin whitening, then burn.  Absorbed through skin fast, produces symptoms as inhaled and may be fatal.	Remove from skin promptly and thoroughly. Wash affected areas with soap and water. Remove contaminated clothing immediately and launder before reuse. Get medical attention immediately.
	IN EYEB	Severe burns and possible loss of eye. $020$	kemove from eye as fast as possible. Flush eyes with water for 15 minutes. Get medical attention immediately.

hendled in liquid pumps will be received to cust the custom cus	rid form at elecutred. Lomer for the COUREMENTS ROCEDURES	temperature of solidifications of the solidification of the solidi	team, remove condense or final neutralizati	te and air dry on.	; 52 caustic sode solution	
hendled in liquid pumps will be recheck with cust to the cost to t	rid form at elecutred. Lomer for the COUREMENTS ROCEDURES	Drain tank, si	team, remove condense or final neutralizati	te and air dry on.	•	
hendled in liquid pumps will be recheck with cust to the cost to t	rid form at elecutred. Lomer for the COUREMENTS ROCEDURES	Drain tank, si	team, remove condense or final neutralizati	te and air dry on.	•	
hendled in liquing pumps will be reck with cust to LABELING REPoison.  11. CLEANING PR	rid form at elecutred. Lomer for the COUREMENTS ROCEDURES	Drain tank, si	team, remove condense or final neutralizati	te and air dry on.	•	
hendled in liquing pumps will be received to cost the cost to the	rid form at electrical recuired.  Lomer for the COUIREMENTS	Drain tank, si	team, remove condense or final neutralizati	te and air dry on.	•	
hendled in liquing pumps will be received to cost the cost to the	rid form at electrical recuired.  Lomer for the COUIREMENTS	temperature of solidifications of the solidification of the solidi	team, remove condensa	te and air dry	; 52 caustic soda solutio	
hendled in liquid pumps will be recharged to the cust the cust the cust to the cust the cust to the cust the custom c	rid form at electrical recurred.  Lomer for the COUREMENTS	temperature of solidif				
hendled in liquid pumps will be right the cust the custom custo	id form at election of the contract of the con		ication and handling.			- 12
hendled in liquipumps will be r Check with cust	id form at election of the contract of the con		ication and handling.	· · · · · · · · · · · · · · · · · · ·		
hendled in liquipumps will be r	vid form at el required.		ication and handling.	·		
	TESSUTE-VBCUL	m vent mendatory on fig levated temperatures; ti	xed roof tanks. hus, heat coiled and/	or insulated t	anks and heat-traced pip	ነክር 🚁
STORAGE CON	ROITAREDIES	 S		<del></del>		
	ity Chart No. tress cracks			Geskets -	JY-60	
Stainless		compatible		Hoses -	Polyethylene crosslink	ed;
Brass	•	compatible		Pumps -	all-iron	
Aluminum	-	compatible		Pipes -	steel	
Steel	-	compatible		Tanks -	steel	
e. Compatibil	ity with:		b.	Preferred Me	lerials for	
		_	ь.	Preferred Me	terials for:	
If such water 1	is dumped into	ppn concentrations is p o sewers, notify sewage	olsonous to aquatic works.	ite and may up	eset sewage works.	
Absorb residua)	ump off to comby Vermiculii	ntainment at separator.  te, dry sand, or Other  ied. remove mechanicall	absorbent, load into		ners, and transport away	for
Notify_plant of Notify U.S. Co	perations Off:	icer. local health and pollu			<u>-</u> .	
SINC-OF BILL	INVITED	in the emergency that	are readily accessib	le.	ी ते हैं है	
Shut-off all l	–	A DOUVELY IDES			•	
6. SPILL AND/O	ge sp111. PR EMERGENC		Seo 11 entry 15 made	into an onvent	insted tank or an enclose	
Keep container: bear protective Air-line or se containing large 6. SPILL AND/O Shut-off all li	s closed and a control of clothing (pingle) of control		and open flame. impervious gloves an	d impervious on into an unvent	verclothing). Nated tank or an enclose	et are

S. PROTECTIVE MEASURES IN HANDLING 5-3

HANDLING AND SAFETY INFORMATION ON COMMODITIES 1. COMMODITY SIGNAL WORD CUMENE CAUTION COMMON'S YNONYMS AND TRADE NAMES DESCRIPTION CHÉMICAL FORMULA Compl Colorless liquid
Gasoline-like odor, strong EAHSCH (CH2)2 1sopropy?benzene 2 phenyl propane Floats on water MOLECULAR WEIGHT 120.19 2. PHYSICAL PROPERTIES -Vapor Pressure: 1.5 psia (77.8 mm Hg) € 185 [ (85 ) Freezing Toint: - 141°F (-96°C) 2.5 psia (129 mm Hg) # Boiling Point: 306°F (152°C) Density (Spec. Gravity) at  $68^{\circ}$  (20°C): 7.3 7bs/ga7 (0.875) 11.0 psia (569 mm Hg) 6 Kinematic Viscosity, at 77°F (25°C): SSU 29 (0.87 cST) at 68°F (20°) -0.06 psia - ( -3 mm H ) at of ( or): ZZN Solubility in Water, 2: Insoluble Specific Heat: D.44 Btu/lt. of (D.44 cal/g. oc) Coefficient of Thermal Expansion: 0.000559 per F Solubility of Water in Commodity, 2: Insolutie 0.00101 per cf 3. HAZARD DATA NEPA Flammability Fleshpoint: 111°f (44°C) CC Hazard Classification Flammability Limits in Air. Volume 2: 0.9 - 6.5 Autoignition Temperature: 797 F (425°C) Threshold Limit Value (TLV): 50 ppm Short-Term Inhalation Limits: Data not available Odor Threshold, pnm: Data not available 4. HAZARD ACTION Combustible. Look exposed containers with water. ...... FIRE Extinguish with dry chemical, foam, or carbon dioxide.

	HARM	ACTION
INHALED	If inhaled for prolonged period or at high con centrations will cause dizziness, drowsiness, narcotic action with long lasting effects.	Move to tresh air It is the bull of the string is difficult. The bull of the string stops, apply entificial the tion. Bet medical attention if the effect noticed.
SWALLOWED	Harmful if swallowed. Ingestion will cause irritation of mucous membranes, vomiting; also effects as inhaled. — Between 1 oz. and 1 pint may cause death.	Do NOT induce womiting. Have victim drink milk or water. Get medical attention.
ON SKIN	Irritating to skin on prolonged contact.	Remove contaminated clothing. Wash affected areas with soap and water. Launder contaminated Clothing before reuse.
IN EYES	May irritate eyes	Flush eyes with water for 15 minutes.  Bet medical attention.
	SWALLOWED ON SKIN	Inhaled for prolonged period or at high concentrations will cause dizziness, drowsiness, narcotic action with long lasting effects.  Harmful if swallowed. Ingestion will cause irritation of mucous membranes, vomiting; also effects as inhaled. Between 1 oz. and 1 pint may cause death.  ON SKIN  Irritating to skin on prolonged contact.  May irritate eyes

5. PROTECTIVE MEASURES IN HANDING Have adequate ventilation. Avoid prolonged breathing of value. Avoid prolonged contact with skin. Keep containers closed and away from heat, sparks and open flame. Hear goggles or face shield and impervious pluves. Air-line or self-contained respirator should be used if entry is made containing large spill.	into an unventi	Nated tank or an enclosed area
6. SPILL AND/OR EMERGENCY PROCEDURES	<del></del>	<del></del>
Secure all ignition sources.		3 4
Shut-off all lines involved in the emergency that are readily accessible Notify plant operations officer. Notify U.S. Coest Guard and local health and pollution control agencies—		
7. SPILL TREATMENT REQUIREMENTS		
Pump off to containment at separator. Absort residual by Vermiculite, dry sand or other solid absorber, plac disposal.	e into closedico	entainers and haul away for
8. COMPATIBILITY WITH MATERIALS		
a. Compatibility with:	. Pr.ferred Mate	rials for:
Steel - Compatible	anks -	steel
Aluminum - Compatible	ipes -	Stee?
Brass - Compatible	: umps -	all iron or bronze fitted
Stainless Steel - Compatible	~oses -	Polyethylene crosslinked.
Compatibility Chart No. 10 hon-corrosive to the usual construction materials.	Gaskets -	Vizon JM-60
9. STORAGE CONSIDERATIONS		<del></del>
Storage temperature: ambient vent on fixed roof tanks.		
10 LABELING REQUIREMENTS None		<del></del>
11. CLEANING PROCEDURES		
CP-9 or CP-7  Strip tank, steam clean and remove or wash with detergent and air dry.		ir dry;
= (Details of the cleaning procedure are gi	ve. in Appendix)	·
12. MISCELLANEOUS		F. 1
Cumene is similar to benzene but less toxic.		-
444		
Compiled by: F. Budininkas Date: March 1976 Revised by:		Date:
Lompiled by: 1. Budininkas Date: Faren 1970 Revised by:	<del></del>	Date:

1 COMMODITY SIGNAL WORD FUEL OIL NO.2 CAUTION COMMON S' NONYMS AND TRADE NAMES CREMICAL FORMULA DESCRIPTION Dily, yellow-brown liquid. home weating oil Mixture of hydrocarbons Domestic healing oil Characteristic fuel oil odor. Floats on water. MOLECULAR WEIGHT 2. PHYSICAL PROPERTIES Freezing Point: -20 CF (-29 C) Vapor Pressure: 1.5 psia (77.6 mm Hg) € 25% Bailing Fair.: 540-640°F (282-338°C) 2.5 psia (129 mm kg) @ Density (Spe . Gravity) at 68°F (20°C): 7.3-7.5 lbs/gal (0.67-6.90) 11.0 psia (569 m kg) & ÷, Ξ; Annematic Vi cosity, at 77°F (25°C): SSU 33 ( 2 cSt) at 68°F (20°C) 5.64 psia ( 2 mm Hg at 6E'f (20 °C): SSU-46 ( - 6 cSt) Solubility in Water, 2: Insoluble Specific Heat, Etu/lb. 7 (cal/g C): 0.47 Solubility of Water in Commodity, i: Insoluble Coefficient of Thermal Expansion: per CF 3. HAZARD I ATA NEDA Flammability Hazard Flashpoint: 136 % ( 58 %) CC Classification Flammability Limits in Air, Volume 1: 0.6 - 6.5 Autoignition Temperature: 494 °F (256 °C) Health e Reactivity Investila Limit Value (TLV). ppm: Short-Term Inhalation Limits: Door Thresh: d. ppm: 4. HAZARD / CTION Partially filled containers may explode in fire. stinguish fire with dry chemical, foam or carbon dioxide. FIRE lool exposed containers with water. ACT HARM labor slightly irritating to mose, tornet and If breathing is citting ... INHALED will cause headache and giddiness. If liquid appirates int. .. .iquid in luncs will cause rapidly neveloping attention immediately. pulmonary edenic. DO NOT INDICE VOMETIME. narmful if swallowed. Have victir drink water or lauses nausea, vomiting, cramps, depression of If appreciable quantity, see ... ! WALLOWED central nervous system, to come and death. Possible delayed kidney and liver damage. Anout one pint will cause death. attention and stomach late & EXPOSURE Remove contaminated clothing.
Remove by wiping and wash affected area Slightly irritating on prolonged contact. ON SKIN SOAD and water. Irritating to eyes. Flush with water for 15 ranutel. IN EYES 024

5 PROTECTIVE MEASURES IN HANDLING 5-2.  Thave adequate wentilation.  Avoid prolonged breathing of vapor.  Avoid prolonged contact with skin.		ية عالا المحمد عموميات		
Reep containers closed and away from heat, sparks wear goodles or face shield and impervious gloves Air-line or self-contained respirator should be u containing large spill.	•		entilated tank or an enclos	ied area
6. SPILL AND/OR EMERGENCY PROCEDURES	<u> </u>			
મુક્ત માટે જે છું કું હામ્યું માટે છ	موريمة المحارية معاد	THE RESIDENCE	र १ र ५ से हैं। युंधारा तथा स्टू	:
Shut-off all lines involved in the emergency that hotify plant operations officer. Actify U.S. Coast Guard and local health and polli			<b>ed.</b>	
•				
•	-		<b>.</b> .	:
7. SPILL TREATMENT REQUIREMENTS	<del></del>	<del></del>	Terraperak ji gara	
-				
Fump off spilled material to containment at separa Absorb residual by Vermiculite or other solid absorb	itor. Troer and tr	ensport for final dis		. •
Tissold (establing vermiculities) other solid abs.	;		poolis Teneral de la companya de la company	
		• • • • • • • •	The Maryon and	:
		4		•
8. COMPATIBILITY WITH MATERIALS	- <del></del>	•		
		•		·
a. Compatibility with:		b. Preferred	Katerials for:	
Steel - compatible		Tanks -	steel file and	<b>*</b>
Aluminum – compatible	-	Pipes -	steel	
Brass - compatible		Pumps -	_all-iron or bronze fit	ted (
Stainless Steel - compatible		Hoses -	Polyethylene crosslink	ed;
Compatibility Chart No. 9		Gaskets -	Buna-N; Viton - JM-60	
Compatible with the usual construction materi	els.		·-· : -	-
9. STORAGE CONSIDERATIONS	· · · · · · · · · · · · · · · · · · ·			
			الله ( <del>المسالية) على المسالية ا</del>	
Venting: Std. pressure-vacuum vents may be used on State of New Jersey Chapt. 16 establishes choice of	fixed root freturn ben	tanks; however stansi d or P-Y vent based a	ird return bends acceptable on tank size for vapor pre:	e. Sure
materials over .D2 psia @ 70°f.	•			
			• • •	
10. LABELING REQUIREMENTS				}
None required.				
11. CLEANING PROCEDURES				
Drain tank,	wash with a	detergent solution a	nd allr-dry. ————	•
= CP-7		J. 5. 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
(Details of the clean	ing procedur	e are given in Append	12)	ಆರ್.ಆ
12. MISCELLANEOUS				
The second secon		•		
and the second s		ري. 		.6
A Company of the Comp			en e	`
	•	በንደ		•
	<u>-</u>	025	•	

Revised by:

Date:

Date: April 1976

Compiled by: P. Budininkas

#### 1. COMMODITY SIGNAL WORD BENZENE DANGER CHEMICAL FORMULA COMMON SYNONYMS AND TRADE NAMES DESCRIPTION Colorless liquid CeHe . Benzol Phenythydride Aronatic odor Floats on water Benzole **MOLECULAR WEIGHT** Flammable Phene 78.11 Eyclohexatriene Irritating vapor is produced Coal Naphtha 2. PHYSICAL PROPERTIES Vapor Pressure: 1.5 psia (77.8 am 16) @ 68 to (20°C) freezing Point: 42 °F (5.5 °C) 2.5 psia (129 mm Hg) P 88 of (3,0C) 176 °F (80.1 °C) Boiling Point: Density (Spec. Gravity) at 68°F (20°C): 7.3 lbs/gal (0.879) pt ( pc) 11.D psia (569 mm Hg) € Kinematic Viscosity, at 77°F (25°C): SSU ZE (0.74 cSt) at 68°F (20°C) 1.5 psia (78 mm Ho) at of ( oc): SSU Solubility in Water, 2: D.DE Specific Heat: 0.419 Rtu/lb. OF (0.419 cel/g. OC) Coefficient of Thermal Expansion: 0.000659 per OF Solubility of Water in Commodity, 2: 0.08 0.00115 per 00 -3. HAZARD DATA Flammability NEPA Hazard Flashpoint: 12 of (11 oc) CC 3 Classification Flammability Limits in Air, Volume 2: 1.3 - 7.9 Autoranition Temperature: 1097 DF (591 DC) Health o Threshold Limit Value (TLV), ppm: ] ] Short-Term Inhalation timits: Ceiling level is 5 ppm for any 15 minute period during the & hour day. Odor Threshold, pur: 5 ppr 4. HAZARD ACTION Flarmable. May be ignited by sparks, open flame, or heat. Flashback along vapor trail may occur. Vapor may explode if ignized in enclosed area. Extinguish with dry chemical, foam, or carbon dioxide. Because of splashing water may be uneffective. FIRE Cool exposed containers with water. hear organies and self-contained preatning apparatus if fighting fire in enclosed area. Smoky flame is characteristic for this material. HARM ACTION value irritating to mose, inrost and eyes. If wove to fresh air inheled for prolonged period or at high concentrations will cause headache, dizziness, breat if preaching is differentiable. If preetning is diffacultagive \_ .... INHALED If breathing stops, apply artifician terms tion. Get medical attention of fill effects preathlessness, thest construction, even come and death. Reseated inhalation presents a leukenta hazard. noticed. harmful if Swallowed. Do NOT induce vomiting. If victim is conscious, have victim crimburning abcominal cain, vomiting. Other SWALLOWED symptoms, same as innated. Between 1 cz. and 1 mint may cause death. water or milk. Get medical attention. EXPOSURE Continuing contect may cause smarting, blister-West affected areas with soap and water. ing and breakage of skin. Repeated contacts Remove all contaminated clothing. ON SKIN with broken skin may result in adsorption causing results as inhaled. Flush with plenty of water for 15 minutes. Considerable irritation to eyes. IN EYES Bet medical attention. 026

027

Revised by:

Compiled by: P. Budininkas Pate: April 1977

record keeping. Note the current TLV of 1 ppm and the ceiling value of 5 ppm.

Date:

COMMON.SYNONYMS AND TRADE NAMES  2. Probanone Propanane Dimethylactone  Dimethylactone  Discription  Colorless liquid Sweet addrington to the propanane Propanane Dimethylactone  Vapor Pressure: 1.5 psia (77.8 mm hg) e35 °F (29 °C °C) Builting Point: -136 °F (-94.7 °C) Builting Point: -135 °F (-96.7 °C) Builting Point: -135 °F (-9			HANDLING A	ID SAFETY INFORMATION (	DN COMMODITIES	•	₩O. A-4
2. Probanone Propanene Dimethylketone  Colorless liquid Sweet odor Floats and mixes with water Highly Flammable  NOLECULAR WERGHT  58.06  2. PRYSICAL PROPERTIES  Free:nng Point: -138 <sup>0</sup> F (-96.7 <sup>0</sup> L)  Boiling Point: -138 <sup>0</sup> F (55 <sup>0</sup> C)  Boiling Point: -138 <sup>0</sup> F (-9C) - 5.6 lbs/gal (0.79)  Altermatic Viscosity, at 70°F (25°C): 5.5 U 27 (0.43 c5t)  at <sup>0</sup> F (-0C): 55U  Solubility in Mater. 2: Soluble in all proportion  Specific Heat: 0.522  Confricient of Thermal Expansion: 0.000813 per <sup>0</sup> F  C.00146 per <sup>0</sup> C  Solubility in Mater. 2: Soluble in all proportions  They boiling in Air, Nolume 2: -2.6 - 12.8  Aut: gantion Temperature: 855 <sup>0</sup> F (465 <sup>0</sup> C)  Flam ability Limits in Air, Nolume 2: -2.6 - 12.8  Aut: gantion Temperature: 855 <sup>0</sup> F (465 <sup>0</sup> C)  Flam ability Limits in Air, Nolume 2: -2.6 - 12.8  Aut: gantion Temperature: 855 <sup>0</sup> F (465 <sup>0</sup> C)  Short-lere Inhalation Limits: 1000 ppn for 30 min  Door Inreshold, ppr 200 - 400  A HZARD ACTION  FIFE  Fife  Fire Inhalation Limits: 1000 ppn for 30 min  Door Inreshold, ppr 201 - 400  A HZARD ACTION  Fire Inhalation Limits: 1000 ppn for 30 min  Door Inreshold: 1000 ppn for 30 min  Door Inreshold: 1000 ppn for 30 min  Fife  INHALED Interface for prolonged period or at high color was all and color and the protocolousness; however exposure to 125.000 ppn for 3-16 minutes without symptoms in the period on at high color period, and the presenting is difficult, give oxyger  INHALED Interface in period on at high color period or at high color period on, and p	1, COUNTY	KULY	F	CETONE			SIGNAL WORD
Freeting Point: -136 OF (-94.7 OC)  Boiling Point: 133 OF (56 OC)  Density (Spec. Gravity) at 68 OF (20 CC): 6.6 Tbs/gal (0.79)  Alimentic Viscosity, at 77 OF (25 CC): SSU 27 (0.43 cSt)  Specific Heat: 0.522  Coefficient of Thermal Expansion: 0.000813 per OF	2- Prop Propane	Panone Phe	D TRADE NAMES	Colorless liquid Swee Floats and mixes with w	i odor	EH3CÓCH3 MOLECULAR V	
Flashboint: 0 °F (-18°C) CC; 15°F (-5°C) CC  Flamiability Limits in Air. Volume 2: 2.6 - 12.8  Autorigation Temperature: 865 °F (865 °C)  Incernoid (imit Value (TIV): 1000 ppm.  Short-Term Inhalation Limits: 1000 ppm for 30 min (Noor Inreshold, ppm: 200 - 400  ## ZARD ACTION  FIFE    Flamiable: May be ignited by heat, sparks and oper flame. Waptor may explode if ignited in or enclosed area. Fertially filled containers may explode in fire. Nation is heavier then air and flashbota along valor trail may occur. Intrinsis with firm, alondoi man, one therefore the part and flashbota along valor trail may occur. Intrinsis with firm, alondoi man, one therefore the part and flashbota along valor trail may occur. Intrinsis with water.    HARM	Freezing P Builing Po Density (S Kinematic Specific H	Coint: -138 OF Dint: 233 OF ( Spec. Gravity) Viscosity, at 7 at	(-94.7 °C) 56 °C) at 68°f (20°C): 6.6 7°f (25°C): SSU 27 °F ( °C): SSU	lbs/gal (0.79) (0.43 cSt) Solut er <sup>C</sup> f Solut	2.5 p 11.0 p at 65 <sup>0</sup> bility in Water, 1	sia (129 mm Hg sia (569 mm Hg F (20 <sup>D</sup> CF.42 %: Soluble in	) \$55 °F (13°C)  ) \$15 °F (46°C)  psia (180 mm. Ho all proportions  : Soluble in all
May be ignited by heat, sparks and oper flame.  Vapor may explose if ignited in an enclosed area. Fertially filled containers may explose in first labor is become at any flashback along vapor trail may occur.  Extinguish with firm, alondo floan, one chemical or carbor dipxigs.  The encosed containers with water.  HARM  ACTION  If inheled for prolonged period on at high con- centrations will cause difficult breathing on life preathing is difficult, give byger loss of consciousness; however exposure to include the encounter of 15,000 per for 3C-EU minutes without symptoms in the encounter.  SWALLOWED  SWALLOWED  SWALLOWED  May be ignited in an energia and present and pres	Flast-point Flam abili Auto gnits Inner nold Short -Term Odor Innes	t: 0 <sup>D</sup> F (-18 <sup>D</sup> C) ity Limits in A: ion Temperature: timit Value (The Innalation Living) shold, ppr. 20	ir, Volume 3: 2.6 : 865 <sup>D</sup> F (465 <sup>D</sup> E) V): 1000 ppm rits: 1000 ppm for 3	- 12.B	Mazard Classification		
If inheled for prolonged period or at high con- tentrations will cause difficult breathing or loss of consciousness; however exposure to 15.000 per for 30-ED minutes without symptoms that beer reported.  SWALLOWED  SWALLOWED  Indestination will cause nausea, womiting, other symptom as innalation.  Indestination promptly.	FIFE	May be ignite Vaper may exp Vapor is head	loge if ignited it a per than air and fla th fram, alcohol fo	en enciosed area. Pertiada Eshbaci along vapor trail m an. or: chemical or cambor	ney occur.	ers may exploc	e पंत विशवह.
INHALED    Tentrations will cause difficult breathing or loss of consciousness; however exposure to   15,000 ppr for 30-ED minutes without symptoms   15 preathing stops, apply artificial rest tion. Get medical attention if ill effect noticed.    Swallowed	- <del></del>		!	HARM		ACTION	
SWALLOWED injection will cause mausea, womiting, other warm salt water or mustard water.  Symptom as inmalation.  Set medical attention promptly.		ł	centrations will collect of consciousn 15.000 ppm for 30-	euse difficult breathing or ess: however exposure to	If preatring If breatring ition. Get me	is difficult, stops, apply a	rtificiel resuir
	EXPOS URE	SWALLOWED	Incestion will cau symptom as innalat	se mausea, vomiting, other ion.	warr salt wet	er or musterd	water.

Slightly irritating to skin on prolonged

ON SKIN

IN EYES

contact.

irritating to eyes.

Remove contaminated clathing.

Set medical attention.

028

Wash effected areas with sozo and water.

Flush eyes with water for 15 minutes.

launder companisated claiming before reuse.

Wear opocles or face	thing of vapor.  Ict with skin.  Id and away from heat, sparks a shield.  Leined respirator should be use		ntilated tank or an enclosed area
6 SPILL AND/OR EME	RGENCY PROCEDURES		
Secure all ignition is Shut-off all lines in Notify plant operation	cources.  Involved in the emergency that a  ons officer.  It to hold down wappr.	ire readily accessible.	e.
7. SPILL TREATMENT	REOUIREMENTS		
Use water for nozzles Dilute with large vol Vapor from Acetone-wa has a flash point of	umes of water before discharge ter solutions can produce expl	Osive mixtures. A solution cont	≥ining 42 Acetone in water still
B. COMPATIBILITY WIT	H MATERIALS	<del></del>	-
a. Compatibility wi	<b>:</b>	b. Preferred M	terials for:
Siee'	- Compatible	Tanks -	steel
#โอกว่ากบ≘	- Competible	Pipes -	steel
brass	- Compatible	Pumps -	all-iron or bronze fitted
Stainless Steel	- Compatible	Hoses -	Polyethylene crosslinked; Buty
Compatibility Character to	art No. E the usual materials of constru	- Gaskets -	hypolon less resistant
Internal floating roo At normal ambient ten	e-vacuum vent mendetory on fixe fs may be required in most stat peratures vapor space is genera	ed roof tanks. tes because of high vapor pressu- ally too rich to burn if saturat:	e considerations. d or nearly saturates.
10 LABELING REQUIRE	MENTS		
11. CLEANING PROCEDS		sh with water, remove solution ar	d air dry.
_ CP-3			
==	(Details of the cleans	ng procedure are given in Append	:x) ·
12. MISCELLANEOUS			

al fi

Industrial Hygiene And Toxicology Division Environmental Conservation And Toxicology Department

Form U-1967-A (8-78)

- 41 -

tion I		
lame	and Synonyms .	Emergency Phone Number
	Decanted Oil	(312) 856 - 5371
an iture	r's Name Amoco Oil Company	Warning Statement Narning! Combustible. Can cause skin irritation on prolonged
ddress	200 East Randolph Drive, Chicago, Illinois 60601	repeated contact. Similar materials ha caused cancer in Faboratory animals.
oduct Idea	ntification	Boiler ash will contain high levels of
	- Fuel 011	metal residues.
AS Numbe		DOT Classification
PA Numbe		Combustible liquid

## action II - Important Components

Catalytic-Cracked Cycle Oil.

ermissable Exposure Concentration OSHA Permissible Exposure Limit 0.2 mg/m<sup>3</sup>.

# action III - Health Effects Of Exposure

Minimally irritating.

Maximum primary eye irritation score of 2.0/110.0; 24 hr. (rabbit).

Minimally irritating for acute exposures. Primary dermal irritation score of 0.2/8.0 (rabbits). However, prolonged or repeated contact is likely to cause skin irritation through defatting. Acute dermal  $LD_{50}$  of greater than 2.0 g/kg (rabbit); practically non-toxic for acute exposures by this route. Cancer hazard based on skin painting tests with laboratory animals. See Section X.

nhalation

None expected under normal conditions of use. See attached statement regarding inhalation of boiler ash.

Ingestion

Acute oral LD50 of 5.27 g/kg (male rats) and 4.32 g/kg (female rats); practically non-toxic for acute exposures by this route.

# Section IV - Emergency And First Aid Procedures

Eye Contact

.Elush\_with.plenty.of.water.

Skin Contact Promptly wash exposed skin with soap and water. Get medical attention if irritation <u>develops. Remove contaminated clothing and thoroughly clean and dry before reuse.</u> If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. Get medical attention.

> If a large amount is ingested, induce vomiting <u>and get medical attention.</u>

/entilation (Type Required)	vide protecti General are	λ	IIC YSDUIT			
oction VI - Fire Prot				•		
	nimum 1500F		Autoignition T	emperature N/A	<del></del>	
lammable Limits lby Vole		Upper N/A		OverN/A	<u> </u>	<del></del>
atinguishing Media						
• • • •	B-C) carbon	dioxide, water i	for form	-		
Inusual Fire and Explosio	n Hazards	<u> </u>		**		<del></del>
None.						
	1 D	d Barrahda Dada			·	
cetton VII - Physics	I Proportion And					
oiling Point (PF)	_N/A	Vapor Pressure (m		N/A	· · · · · · · · · · · · · · · · · · ·	
Helting Point (PF)		Vapor Density ( /		N/A PH	N/A	
Specific Gravity (Water = 1		Solubility in Water	7 <del></del>	<u>Negligible</u>		
/iscourty	35-50 cs 02				<del></del>	<del></del>
Appearance and Odor  (azardous Polymerization	Black, visco	ous liquid.		De-1070	<del></del>	
roducts Formed When Su	historian High Tame			Does NOT Occur Y		<del></del>
	www.ca.to.uidi isui	Printing of Commission				
N/A Autorials to Avoid 1917						
VATERISTS TO VACID 11/						
Store in combus	end Environments	<del></del>				
Store in combustocours in Case of Breat Contain on an interest of Controlled incides adapting to the controlled incides and the controlled incides an	stible liquids  Abosrbent mate  ineration: cor	s storage area. erial. nsult local ordi	Bioaccumulati	ion 🔲 Yes	□ Ne	[] Unknown
Store in combustions of Breaketing Contain on an interest of Controlled increased bility Controlled bility Con	stible liquids  Abosrbent mate  ineration: cor	s storage area. erial. nsult local ordi  Clunknown  ulated By (Specific	Bioaccumulati	10n		[] Unknown
Store in combustocours in Case of Breat Contain on an areas of Controlled inclined inclined and controlled and controlled and controlled inclined and controlled and controlle	stible liquids  Abosrbent mate  ineration: cor	s storage area. erial. nsult local ordi	Bioaccumulati	ion 🔲 Yes		[] Unknown
Store in combustions of the control	stible liquids kage or Leakage abosrbent mate ineration: cor Yes	s storage area. erial. nsult local ordi  Clunknown  ulated By (Specific	Bioaccumulati	10n		[] Unknown
Store in combustice of Breat Contain on an interest of Breat Controlled incides adability Coction IX - Marketin FDA  Cotton X - Comment	stible liquids  kage or Leakage  abosrbent mate  ineration: con  Yes	s storage area. erial. nsult local ordi  Clunknown  ulated By (Specific	Bioaccumulation  Regulation	t cancer risk	to humar	ns if the
Store in combustice of Break Contain on an Australia Onto IX - Marketin Oction IX - Marketin OFDA  This product is personal hygies sheet are following products of the following product in the content of the content o	stible liquids  says or Leakage  shos rhent mate ineration: cor  yes	s storage area.  erial.  sult local ordi  Cunknown  ulated By (Specific  USDA  d to present a s	Regulation ignificant ause skin act. In a tain high haled in spritation	t cancer risk other section cancer in laboration, ash to concentrations of the concentra	to human ns of the pratory a from boil s of ant ntities,	ns if the is data animals lers in imony, could in con-
Contain on an August Onposes  Controlled incided Socion IX - Marketin  FDA  This product is personal hygies sheet are following proluming proluming the harmful. It tact, and the	stible liquids  kage or Leakage  shos rhent mate  ineration: cor  Yes	s storage area.  Prial.  Sult local ordi  Cunknown  Ulated By (Specific  USDA  d to present a stion measures de been shown to ca quent skin conta burned can conta ic which, if ind so cause skin i	Regulation ignificant tailed in attain high haled in striction ash is li	t cancer risk other section ddition, ash i concentrations sufficient quar following extends to be care	to human ns of the pratory a from boil s of ant ntities, ended sk rcinogen	ns if the is data animals lers in imony, could in con-ic.

# Section XI

## WARNING!

## COMBUSTIBLE!

CAN CAUSE SKIN IRRITATION ON PROLONGED OR REPEATED CONTACT.

SIMILAR MATERIALS HAVE CAUSED CANCER IN LABORATORY ANIMALS.

BOILER ASH WILL CONTAIN HIGH LEVELS OF METAL RESIDUES.

To be used in closed systems as fuel where human contact will be minimal.

This material may be a significant cancer risk to humans if the hygiene and personal protection precautions in this data sheet are not followed.

Keep away from heat and open flame. Use with adequate ventilation. Avoid skin contact. In case of contact, wash exposed skin with soap and water. Get medical attention if irritation develops. Wear protective clothing, gloves, and oil-impervious footwear when contact is likely. Remove contaminated clothing and thoroughly clean and dry before reuse.

Avoid breathing ash dust and oil vapors. Use with adequate ventilation. If ventilation is inadequate, use NIOSH-MSHA certified combination respirator which will provide protection against organic vapor/particulates.

#### Section I

.......

## Trade Name & Synonyms

he name under which the product is marketed and the common commercial name of the product.

#### Product Identification

The chemical or generic name of single elements and compounds or for compounded products and mixtures, the general type of product, e.g., calcium complex grease, motor oil, polymer, sulfonate, surfactant, etc.

### CAS Number

The Chemical Abstracts Registry number, if applicable.

#### **EPA Number**

The code number assigned by the Environmental Protection Agency, if applicable.

#### Formula

The chemical formula for single elements or compounds.

### **DOT Classification**

The appropriate classification as determined by the regulations of the Office of Hazardous Materials, Department of Transportation.

#### Section II

## Important Components

The major component as well as any minor one(s) having potential for harm which are considered then evaluating the product.

#### Permissible Exposure Concentration

Indicates Threshold Limit Value (TLV), any limit established by a governmental regulatory agency, or an estimate if none have been established.

# Section III Health Effects of Exposure

Possible health hazards as derived from human observation, animal studies or from the results of studies with similar products.

Medial Lethal Dose or Concentration (LD50, LC50) That dose or concentration of the material which will produce death in 50 per cent of test animals. For inhalation, the exposure time is indicated.

### Imitation Index

An empirical score for eye and skin irritation when tested by the methods described in Section 1500.40 of the Federal Hazardous Substances Act.

## Sensitizer

A substance which will cause on or in normal living tissue, a hypersensitivity which becomes evident on reapplication of, or exposure to, the same substance.

# Section IV Emergency and First Ald Procedures

Gives first aid and emergency procedures in case of aye and/or skin contact, ingestion and inhalation.

### Section V Personal Protection Information

## Eye, Skin, Respiratory

The type of protective equipment that is necessary for the safe handling and use of the product.

#### Ventilation

Refers to the type recommended: i.e., local exhaust, mechanical, etc.

#### Section VI Fire Hazard Information

#### Flesh Point (State Method Used)

The temperature in degrees F at which a liquid will give off enough flammable vapor to ignite in the presence of a source of ignition.

### **Eutelignition Temperature**

The minimum temperature required for a substance to initiate self combustion in the absence of a spark or flame.

## Flammable Umits

The range of gas or vapor concentration (per cent by volume in air) which will burn or explode if an ignition source is present. Lower means the lower flammable limit and upper the upper flammable limit given in per cent.

## Extinguishing Media

Specifies the fire fighting agent(s) that should be used to extinguish fires.

### Unusual Fire and Explosion Hazards

Refers to special procedures required if unusual fire hazards are involved.

# Section VII Physical Properties and Reactivity Data

### Vapor Pressure

The pressure of saturated vapor above the liquid expressed in mm Hg at 20°C.

### Viscosity

A measure of the resistive flow of liquid due to gravity or for viscous liquids a measure of the resistance to turning or twisting. State method, units and temperature.

## Vapor Density

The relative density or weight of a vapor or gas (with no air present) compared with an equal volume of air at ambient temperature.

The degree of acidity or basicity of the material in specific concentration

# Specific Gravity

The ratio of the weight of a volume of the material to the weight of an equal volume of water.

## Solubility in Water

The solubility of a material by weight in water at room temperature. The terms negligible, less than 0.1 per cent; slight, 0.1 to 1 per cent; moderate 1 to 10 per cent; appreciable, 10 per cent or greater.

## Appearance and Odor

The general characterization of the material, i.e., powder, colorless liquid, aromatic odor, etc.

## Hezardous Polymerization

Refers to that reaction which takes place at a rate which releases large amounts of energy. Indicates whether or not it may occur and under what storage conditions.

### Metericle to Avoid

Indicates those material or conditions causing the product to react violently, releasing large amounts of energy.

# Section VIII Storage and Environmental Protection

Procedure in Case of Breakage or Leakage Indicates precautions necessary in such events. Includes clean-up procedures and hazards that may be created, i.e., fire, explosions, etc.

Blode gredet blity/Bioaccumulation Indicates whether or not the product will biodegrade or bioaccumulate.

The information contained herein is based on data evailable to us and is believed to be correct. Since this information may have been obtained in part from independent laboratories or other sources not under our direct supervision, no representation is made that the information is accurate, reliable. complete or representative and Buyer may rely thereon only at Buyer's risk. We have made no effort to censor nor to conceal deletorious aspects of this product. Further, since we cannot anticipate or control the many different conditions under which this information or our products may be used, we make no guarantee that the health and safety precautions we have suggested will be. adequate for all individuals and/or situations involving its handling and use. Likewise we make no guarantee or warranty of any kind that the use or disposal of this product is in compliance with all federal, state or local laws. It is the obligation of each user of the product mentioned herein to determine and comply with the requirements of all epplicable statutes.



Amoco Oil Company 200 East Randolph Drive Chicago, Minois 60601

1. COMMODITY SIGNAL WORD ETHYL ALCOHOL CAUTION والمساعة والمستوجود DESCRIPTION CHEMICAL FORMULA COMMON SYNONYMS AND TRADE NAMES Colorless liquid Ethanol L.H.OH Grain alcohol Alcohol odor Alcohol Floats and mixes with water Spirit Flammable **MOLECULAR WEIGHT** Spirit of wine Denatured alcohol 46.07 500 (1225) (1225) (1255) (1255) 2. PHYSICAL PROPERTIES Vapor Pressure: 1.5 psia (77.8 mm Hg) @ 85 of (290c) freezing Point: -173°F (-114°C) 2.5 psia (129 mm Hg) @ 105 F (41 C) Boiling Point: 173°F (78°C) Density (Spec. Gravity) at 68°F (20°C): 6.6 lbs/gal (0.790) 11.0 psia (569 mm Hq) @ of 1 oc) Kinematic Viscosity, at 77°F (25°C): SSU 30 (1.35 cSt) at 68°F (20°C) 0.8 msia (4) mm Hn) at of ( oc): SSU Solubility in later. 2: In all proportions----Specific Heat: 0.60 - . . . Coefficient of Thermal Expansion: Solubility of later in Commodity, T: In all proportions 0.000622 per C 0.00112 per C 3. HAZARD DATA Flammability **MFPA** Hazard Flashpoint: 65°F (18°C) CC **Classification** Flammability Limits in Air, Volume %: 3.3 - 19.0 Autoignition Temperature: 689°F (365°C) Health a Reactivity Threshold Limit Value (TIV): 1000 ppm Short-Term Inhalation Limits: 5000 ppm for 15 min. Odor Threshold, ppm: 10 ppm Med Libe. 4. HAZARD ACTION May be ignited by heat, sparks, or open flame. Fleshback elong vapor trail may occur. FIRE Vapor may explode if ignited in an enclosed area. Vapor may explode at ignited in an encrosed wiew.

Extinguish with dry chemical, alcohol foam, or carbon dioxide. Direct water stream may take the control of the control o Door exposed containers with water. HARM ACTION High concentrations are irritating to eyes. hemove to fresh bir. Bive strong and If breithing is affected, get medice: - . nose, 1hmoat. -----INHALED Headache, Orowsiness, intoxication. Sive strong coffee. Burning of mucous membranes and stomach. Drowsiness, intoxication, headache. If large amounts swallowed, get medical **SWALLOWED** attention About one pint may cause death. EXPOSURE May cause irritation on prolonged contact. Wash affected areas with water. ON SKIN Light Strain Strain 035 Flush eyes with water: IN EYES Irritation of the eyes.

	<u>-</u>			
5. PROTECTIVE MEASURES IN HANDLING S-2  Have adequate ventilation. The second s		But amales	B gambin	
Wear googles or face shield and impervious gloves.		•		
Air-line or self-contained respirator should be use	ed if entry is made in	nto an unventi	lated tan	k or an enclosed area
containing large spill.			Ē	
			<del></del>	······································
6. SPILL AND/OR EMERGENCY PROCEDURES				
Secure all ignition sources.	••		• •	₹
Shut-off all lines involved in the emergency that a Notify plant operations officer.	ire readily accessible	<b>:</b> .		;i• •
Use water for nozzles to hold down vapor.		•		
Notify U.S. Coast Guard and local health and pollut	ion control agencies.	. If required.		
				• • • • • • • • • • • • • • • • • • • •
7. SPILL TREATMENT REQUIREMENTS				- 1
Spilled material is still subject to tax liability	and must be disposed	of as directe	by ATFO	Representative.
. •••				•
· .				
				-
				•
		<del></del>		
B. COMPATIBILITY WITH MATERIALS				•
a. Compatibility with:	<b>b.</b>	Preferred Mai	erials for	
Steel Tompatible				
Steel - Compatible		Tanks -	steel	
Aluminum - Compatible		Pipes -	steel	•
Brass - Compatible		Pumps -	all-iron	or bronze fitted
Stainless Steel - Compatible		Hoses -		tomers acceptable;
218 1111522 27561 - maile rinie		noses -	prefer P or Butyl	lyethylene crosslinke
Compatibility Chart No. 5		Gaskets -	JM-60	· · · · · · · · · · · · · · · · · · ·
Non-corrosive to the usual construction materia	ols.			· · · · · · · · · · · · · · · · · · ·
9. STORAGE CONSIDERATIONS				The second second
S. STURAGE CONSIDERATIONS				
Storage lamperature: ambient.			. <b>'-</b>	
Senting: Std. pressure-vacuum vent mandatory on fixe Anhydrous ethanol is hydroscopic. Eustomer may rec		itrogen pad.=		
·····	· · · · · · · · · · · · · · · · · · ·			
10. LABELING REQUIREMENTS				
Flammatle liquid.	2.8			•
		·		<del></del>
11. CLEANING PROCEDURES	e e e e e e e e e e e e e e e e e e e			•
The second secon	ish with water and air	dry.		•
CP-3		<i>-</i>	· · · · · · · · · · · · · · · · · ·	
				-tt.
{Details of the cleaning	ng procedure are give	n in Appendix)		
			<del></del>	
12. MISCELLANEOUS  Ethyl alcohol may be stored either pure (usually 190 Denatured ethyl alcohol may have an unpleasant odor- alcohol) applies and is enforced by the Treasury Dep undenatured, (pure), involves extensive approvals, pe ventory and billing procedures but also with the phy access roads, lighting, joint seals, etc. Mixing wit complicated in-line blending equipment to obtain acc	A tax liability of it's Alcohol and Tabac emits and special pap sical arrangement of h demineralized water eptable uniformity.	\$10.50 per price and Firear work which walves, union requires sop	oof gallor ms unit. deal mot s. pumps. histicated	Il gal. of 100 proof itorage of Ethanol, inly with the in- rea enclosure, mixing wessels or
equipment to assure uniform mixing of various denatu	rant compounds.			

Compiled by: -P. Budininkes -- Date: March 1976 Revised by:



## DIETHYLENE GLYCOL

SIGNAL WORD

ATTENTION

COMMON SYNONYMS AND TRADE NAMES

3-0xa-1.5-pentamediol

Glycol Ether DEG

Dihydroxy-diethyl ether

2, 2' Oxybisethanol 8,8' - Dihydroxydiethyl ether Bis (2-hydroxethyl) ether

DESCRIPTION

Colorless. 011, liquid

Odorless

Sinks and mixes with water

CHEMICAL FORMULA

(HOCH2CH2)20

**MOLECULAR WEIGHT** 

106.12

2. PHYSICAL PROPERTIES

Freezing Point: 20°F (-8°C)

Boiling Point: 473°F (245°C)

Density (Spec. Gravity) at 68°F (20°C): 9.32 (1.118) Kinematic Viscosity, at 77°F (25°C): SSU \_141 ( 30 cSt)

at 59°F (15°C): \$\$U 210

Specific Heat: -0.55

Coefficient of Thermal Expansion:

D.00050 per of -- ..

0.00090 per C

Vapor Pressure: 1.5 psia (77.8 mm Hg) @355 0F (179°C)

2.5 psie (129 mm Hg) @ °F ( °C)

Pf ( °C) 11.0 psia (569 mm Hg) P

at 68°F (20°C) Neg.osia (0.0)mm Hn)

Solubility in Water, %: In all proportions

Solubility of Water in Commodity, 2: In all proportions

### 3. HAZARD DATA

Flashpoint: 255°F (124°C) CC

Flammability Limits in Air, Volume 3: 1.6 - 10.B

Autoignition Temperature: 444°F (229°C)

Threshold Limit Value (TLV): 100

Short-Term Inhalation Limits:

Odor Threshold, ppm: Not pertinent

NEPA Hazard Classification Health o Flammahility

Reactivity

### 4. HAZARD ACTION --- .

FIRE

Combustible.

Extinguish with dry chemicals, foam, carbon dio~ide, or water spray.

Foam or water may cause frothing.

	<u> </u>	- HARM	ACTION
	_4NHALED	No problem likely under normal conditions.	If ill effects noticed, get medical attention.
KPOSURE	SWALLOWED	Large amounts may cause damage of kidney and liver. About one quart will cause death.	Induce vomiting by giving salt or mustard water.
	ON SKIN	May cause slight skin irritation on prolonged contact.	Wash affected areas with soap and water
*	IN EYES	Irritation 036	Wash with water.

		Jan	
S. PROTECTIVE MEASURES IN HANDLING 5-1	1306 \$35.542 <b>.</b>	المياؤر مج	· 李明本文学 · · · · · · · · · · · · · · · · · · ·
Avoid prolonged contact with skin.	• •		
Wear goggles or face shield.			
			• •
•		• • •	* <del>*</del> 
₹ <b>.</b>		• .	그 및
B. SPILL AND/OR EMERGENCY PROCEDURES •	era e e propo e e e	2 may 23	the fact of attrices only the
Shut-off all lines involved in the emergency that are re	eadily accessib	le. 🐭 🏋 📆	<b>m</b> and of a control of the last
Notify plant operations officer. Use water fog mozzles to hold down vapor.		- *	
Notify U.S. Coast Guard and local health and pollution of	control agencie	s, if required.	
<b>o.</b>			anne de la seconda de la companya de
e des print describinan de despesario impropriéta despérado de sido cabricado por el militar de la como dela como de la como dela como de la como de la como de la como dela como de la como dela como de la como			<u>arti timberilekt, ji</u>
			- Fe and
7. SPILL TREATMENT REQUIREMENTS		•	
Pump off spilled material to confinement.			ili. Singa di singa di singa si
Flush residual with water. Dilute with water before dis	charge to sewer	r: or sanitary	
Control of the series of the control			
	•		
and the second of the second o		•	e de la companya de l La companya de la companya de
B. COMPATIBILITY WITH MATERIALS	***	5 <u>~6.0</u>	=
a. Compatibility with:	· · · · · · · · · · · · · · · · · · ·	Drafarmad Mad	erials for:
	<b>.</b>		2747
Steel - Compatible		Tanks -	steel
Aluminum - Compatible		Pipes -	steel -
Brass -		Pumps -	all-fron = 5
	•	rumps —	
Stainless Steel - Compatible		Hoses -	Polyethylene crosslinked; Butyl; Buna-N
Compatibility Chart No. 5	-	Gaskets -	3M-50
Most materials of construction suitable.			
	<u> </u>		
B. STORAGE CONSIDERATIONS		<u>.</u>	
			the second secon
May require heating and insulation of tanks, pipes, hose Higher viscosity at lower embient temperatures will cause	s, ælc • flow oroblems	if not ransing	
Venting: Std. presure-vacuum vent recommended	• .		
Material is not very heat sensitive.			
O. LABELING REQUIREMENTS			
or expecting description	TO THE STATE OF TH		
None required.	Venus rigisa	اق	
• • • •			
1. CLEANING PROCEDURES		-	
	with water: Tem		Nate New
	wereis 1201		~ -11,743.
Drain tank, wash e			
CP-4	u zamo orojekom. Lego orojeka izma	The state of the s	THE WOLLDWINE TO SELECT
CP-4	u de la companya de La companya de la co	Training to the	
CP-4  (Details of the cleaning pr	u de la companya de La companya de la co	an In Appendix	
CP-4 (Details of the cleaning pr	u de la companya de La companya de la co	=n in Appendix	
CP-4	u de la companya de La companya de la co	en in Appendix	
CP-4 (Details of the cleaning pr	u de la companya de La companya de la co	en in Appendix	
CP-4 (Details of the cleaning pr	piedure are giv	=n in Appendix	
CP-4 (Details of the cleaning pr	u de la companya de La companya de la co	en in Appendix	
CP-4 (Details of the cleaning pr	piedure are giv	en in Appendix	





CELANESE CHEMICAL COMPANY, INC.

1250 WEST MOCKINGBIRD LANE

DALLAS TX 7524

PHONE: 214-689-4000

## DIETHYLENE GLYCOL

### **DESCRIPTION**

Diethylene glycol is a clear, colorless syrup-like liquid with little odor. It will dissolve in water. Diethylene glycol does not readily react with other materials or itself.

### **EFFECTS ON PEOPLE**

Contact with the liquid is slightly irritating to the skin and eyes. Exposure to harmful amounts of the vapor is very unlikely since diethylene glycol does not readily vaporize at room temperature.

### USES

Diethylene glycol is used in unsaturated polyesters, polyurethanes, alkyds, and resin esters. Diethylene glycol has significant applications as a solvent for dye stuffs, inks, and duplicating fluids. It is also blended into anti-freeze formulations.

CAS No. 111-46-6 Rev. 0, 2/80

TO THE BEST OF DUR KNOWLEDGE. THE INFORMATION CONTAINED HEREIN IS ACCURATE. HOWEVER, NETHER CELANESE COPPORATION NOR ANY OF ITS AFFILIATES ASSUMES ANY LIABILITY WHATSOEVER FOR THE ACCURACY OF COMPLETENESS OF THE INFORMATION DOWNATION DEFENIN FINAL DETERMINATION OF SUITABILITY OF ANY MATERIAL AND WHETHER THERE IS ANY INFRINGEMENT OF PATENTS IS THE SOLE RESPONDEDLITY OF THE USER

ALL CHEMICALS MAY PRESENT UNKNOWN HEALTH HAZARDS AND SHOULD BE USED WITH CAUTION. ALTHOUGH CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION. WE CANNOT GUARANTEE THAT THESE ARE THE ONLY HAZARDS WHICH EXIST USERS OF ANY CHEMICAL SHOULD SATISFY THEMSELVES BY INDEPENDENT INVESTIGATION OF CURRENT SCIENTIFIC AND MEDICAL KNOWLEDGE THAT THE MATERIAL CAN BE USED SAFELY.

### HANDLING AND SAFETY INFORMATION ON COMMODITIES --- ---

1. COMMODITY SIGNAL WORD **ASPHALT** CAUTION DESCRIPTION CHÉMICAL FORMULA COMMON SYNONYMS AND TRADE NAMES Mixture Thick dark brown to black semisolid Petroleum pitch Tar odor Bitumen May float or sink in water Mineral pitch MOLECULAR WEIGHT Mixture 2. PHYSICAL PROPERTIES Softening Point: -194°F (-90°C), varies Vapor Pressure: 1.5 ps1a (77.8 mm Hg) € DF ( PC ) Boiling Point: >696 °F (>370°C), varies ۴ ( 2.5 psia (129 mm Hg) @ (30 Density (Spec. Gravity) at 68°F (20°C):7.5-9.2 lbs/gal (0.9-1.1) F ( 11.0 psia (569 mm Hg) @ 41 Ainematic Viscosity, at 77°F (25°C): SSU ( cSt) at 68°F (20°C) Negl. psia fregl.mm Hg) at "F ( "C): SSU ( ESt) Solubility in Water, 2: Negligible Specific heat, Btu/lb. T (cal/g C): D.48 Solubility of Water in Commodity, 2: Coefficient of Thermal Expansion: per DF per "C 3. HAZARD DATA NFPA Flammatility Hazard Flashpoint: 50-400°F (16-204°C) CC, depending on grade Elessification Flammability Limits in Air, Volume 1: C Health ( Autonomition Temperature: 500 of (482 of) Reactivity Inreshold Limit Value (TLV), pom: 5 mg/cu.m. Short-Term Inhalation Limits: Door Inteshold, pom: 4. HAZARD ACTION Compustible (some grades may be flammable). Extinguish wire carpor dickide, dry chemical, or foam. Water way cause frothing. Lot? exposed containers with water. FIRE HOITSA HARM Move to tresh eit. in per arratating to mose, throat and eyes. is mes of not asphalt may cause hauses and INHALED ic:zziness. Project Committee Committe Hirmful if swallowed. Induce vomiting by giving an emetic such as Incestion will cause irritation of intestinal warr. Salt water or mustard water. SWALLOWED Tract. EXPOSURE REMOVE Conteminated Clothing. ... Slightly irritating to skin. wash affected areas with spap and water. OH SKIN Contact with hot liquid will cause heat launder contaminated clothing before reuse. tristers and burns. Get medical attention for purns. li-itating to eyes. Flush eyes with water for 15 minutes. IN EYES Get medical attention. Hot liquid can cause eye burns. 039

S. PROTECTIVE MEASURES IN HANDLING    Second   S	ASPHALT	The state of the s
Avoid prolonged breathing of funes. Avoid contect with skin.  Near gogiles or face shield and innervious gloves.  6. SPILL AND/OR EMERGENCY PROCEDURES  5. Shut-off all lines involved in the emergency that are readily accessible. Activity plant operations officer. Notify plus. Coast Guard and loce" health and pollution control agencies, if required.  7. SPILL TREATMENT REQUIREMENTS  Allow to cool and solvidify; their remove acchanically. Absort residual by sand or dirt and haul away.  6. COMPATIBILITY WITH MATERIALS  a. Compatibility with:  5. Seel		
### Boppiles or face shield and innervious gloves.  6. SPILL AND/OR EMERGENCY PROCEDURES  Shut-off all lines involved in the energency that are readily accessible. Notify plant operations officer. Notify plant operations officer. Notify plant operations officer. Notify U.S. Coast Buard and local health and pollution control agencies, if required.  7. SPILL TREATMENT REQUIREMENTS  Allow to cool and solidify; ther remove exchanically. Absort residual by send or dirt and haul away.  8. COMPATIBILITY WITH MATERIA'S  a. Compatibility with:  5. Steel	Avoid prolonged breathing of fumes.	-
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Allow to cool and solidify; ther remove mechanically.  Absort residual by seno or dirt and haul away.  6. COMPATIBILITY WITH MATERIALS  a. Compatibility with:  Steel	7 CONT TOPATMENT RECUIREMENTS	
Absort residual by seno or dirt and haul away.  8. COMPATIBILITY WITH MATERIALS  a. Compatibility with:  Steel - compatible  Aluminum - compatible  Bress - compatible  Bress - compatible  Bress - compatible  Bress - compatible  Compatibility Chart how.  Compatibility Chart how.  Stainless Steel - Compatible  Compatibility Chart how.  Gaskets -  8. STORAGE CONSIDERATIONS  Verting: Std. return bend.  And of elevated temperature. Heat oblice and/or insulated tanks and heat-traced piping and pumps will be recovered.  And include at elevated temperature. Heat oblice and/or insulated tanks and heat-traced piping and pumps will be recovered.  And include at elevated temperature. Heat oblice and/or insulated tanks and heat-traced piping and pumps will be recovered.  And of the compatible of crace medical check with customer (normally in the 200°F to 200°F to 200°F recovered.  And the compatible of the company of the		·
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Size   Constible   Tanks - steel    Aluminum - Constible   Pipes - steel    Bress - Constible   Pumps - all-from or bronze fitted, heavy duty gear    Stainless Size   Constible   Hoses - Viton; Buna-h    Compatibility Chart No.   Gaskets -    S. STORAGE CONSIDERATIONS    Venting: Stc. return bend.    Nending at elevated temperature, heat coiled and/or insulated tanks and heat-traced piping and pumps will be required at elevated temperature, heat coiled and/or insulated tanks and heat-traced piping and pumps will be required.    AFI ELI tanks are penerally us: insulated with "High" temperature glass - blankets and weather peneral    AFI ELI tanks are penerally us: insulated with "High" temperature glass - blankets and weather peneral    AFI ELI tanks are penerally us: insulated with "High" temperature glass - blankets and weather peneral    AFI CLEANING PROCEDURES    Empty tank, use detergents or caustic solution, remove concensate and companies    CP-7 or CP-8	6. COMPATIBILITY WITH MATERIALS	•
Aluminum - corpatible Pipes - steel  Brass - corpatible Pumps - all-iron or bronze fitted, heavy duty gear  Stainless Steel - corpatible Pumps - all-iron or bronze fitted, heavy duty gear  Compatibility Chart No. Gaskets -  S. STORAGE CONSIDERATIONS  Venting: Stc. return bend. head fed at elevated temberatures, heat coiled and/or insulated tanks and heat-traced piping and pumps will be required. head fed at elevated temberature bear neadled; check with customer (normally in the 2009F to 400FF vents.  ACC LABELING REQUIREMENTS  April 650 tanks are benerally user insulated with "high" temberature glass - blankets and weather hear of the control	a. Compatibility with:	b. Preferred Materials for:
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Empty tank, use detergents or caustic solution, remove condensate and an CP-7 or CP-8		
CP-7 or CP-8	11. CLEANING PROCEDURES	
		ergents or caustic solution, remove condensate and an
Details of the cleaning procedure are given in Appendix)	CP-7 or CP-8	_
Details of the cleaning procedure are given in Appendix)	-	
		predure are diven in Annandiv) :
	2. MISCELLANEOUS	occord one grown in Appendix,

# GASOLINE, AUTOMOTIVE

SIGNAL WORD

CAUTION

COMMON SYNONYMS AND TRADE NAMES

Petrol-Motor spirit DESCRIPTION

Watery, colorless to pale brown or อากห์ ให้อบหัช. Basoline odor. Floats on water.

CHEMICAL FORMULA

Mixture of Hydrocarbons

**MOLECULAR WEIGHT** 

2.5 psia (129 mm Hg) # 15 F ( -9 C)

11.0 psia (569 sm Hg) # 91 FF ( 33 °C)

at 68°F (20°C) 7.6 psia (393 mm Hg)

THE MEDICAL PROPERTY.

2. PHYSICAL PROPERTIES

Freezing Point: <-50°F (<-45°C)

Boiling Point: 140 - 390°F (60-199°C)

Density (Spec. Gravity) at 68°F (20°C): 6.2 7bs/gal-(0.71-0.75) \*\*\*-

Kinematic Viscosity, at 77°f (25°C): SSU 31 (1.5 ESt) ...

at Pf ( °C): SSU ( : £5t)

Specific Heat, Blu/lb. 7 (cal/g C): 0.525

Coefficient of Thermal Expansion: per of D.00070

Solubility in Water, 3:

Solubility of Water in Commodity, 1: -- Insoluble --

Vapor Pressure: 1.5 psia (77.8 mm Hg) € -5 or (-15 og)

per °C 0.00127

3. HAZARD DATA

Flashpoint: -36 9 (-38 °C) EC

Flammability limits in Air, Volume %: 1.4 - 7.4

Autoignition Temperature: 495 °F (257 °C)

Threshold Limit Value (TLV), ppm: 500

Short-Term Inhalation Limits: 500 ppm for 30 minutes

Odor Threshold, ppm:

Hazard Classification Health .

Flammability

4. HAZARD ACTION

Extremely Tlanmable.
May be ignited by heat, sparks, or open flame. May explode if ignited in an enciosed areas to

Vapor is heavier than air and flashback along vapor trail may occur. Fartially filled containers may explode in dire.

Extinguish with fram, dry chesicals, or carbon disside.

Lool exposed containers with water.

HARM

JNHALED

irritating to eyes, most and throat.
Exposures to low concentrations or fur short
time has little effect. High concentrations will cause dizziness, headache, anesthesia, coma, and respiratory arrest.
Liquid in lungs will cause pulmonary edema. Move ic fresh air. If breathing is difficult, ci. : : If breathing has stopped, administer and respiration:

If liquid in lungs, get medical etrentus
immediately.

SWALLOWED

Harmful of swallowed. Irritation of mouth, esophagus and stomach; vomiting, diarrhea; symptoms as inhaled. Between one ounce and a pint may cause death.

DO NOT INDUCE VOMITING. have wictim drink milk or water. If appreciable quantity swallower, get record attention and stomach-lavage.

EXPOSURE .

FIRE

. . .

ON SKIN';

Irritating to blin on long exposure. "

Remove contaminated clothing. Wash affected areas with soep and water.

The same of the sa

Irritating to eyes. IN EYES

Flush eyes with water for 15 minutes. Ge1 medical attention:

### GASOLINE, AUTOMOTIVE

## 5. PROTECTIVE MEASURES IN HANDLING SOLD WITH A COMPANY AND A COMPANY AND

Have adequate ventilation.

Avoid prolonged preathing of vapor. -- -

Avoid prolonged contact with skin.

Keep containers closed and away from heat, sparks and open flame.

Wear gogoles or face shield and impervious gloves.

Air-line or self-contained respirator should be used if entry is made into an unventilated tank or an enclosed area containing large spill.

### 6. SPILL AND/OR EMERGENCY PROCEDURES

Secure all ignition sources.

Shut-off all lines involved in the emergency that are readily accessible.

Notify plant operations officer.

Use water fog nozzles to hold down vapor.

Notify U.S. Coast Guard and local health and pollution control agencies, if required.

#### 7. SPILL TREATMENT REQUIREMENTS

Apply foam or fine water spray to minimize vapor formation.

Pump off spilled material to confinement at separator.

Residual will evaporate in a few hours; however, adequate precautions should be taken to prevent possible ignition ? of the wapor.

#### B. COMPATIBILITY WITH MATERIALS

## s.--Compatibility with:----

Steel Compatible

Compatible &luminum

**Ecompatible** Brass

Compatible Stainless Steel

.8 Compatibility Chart No.

Rubber hoses are attacked and unsuitable.

## b. Preferred Haterials for:\_\_\_\_

. . . . .

steel

TENNET TO BUILDING

Fipes -

steel all-iron or bronze fitted

Buna-N; Polyethylene crosslinked

المستعرف فالمراجع والمعاور

Tess resistant a ....

JM-ED Gaskets -

### 9. STORAGE CONSIDERATIONS

Because of vapor pressure considerations, most states will require an internal floating roof or an openitop filester. leaded pasplines require additional precautions in handling and cleaning to avoid the toxic effects of promisions compounds present.

#### **10. LABELING REQUIREMENTS**

Flammable liquid.

## 11. CLEANING PROCEDURES

Drain lank, gasfree mecha ically and air dry.

ting the real property of the time and the

(Details of the cleaning procedure are given in Appendix)

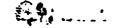
### 12. MISCELLANEOUS

Various grades of gasoline will behave similarly; however, their volatility and vapor pressures may vary depending to on blends used for geographical and seasonal considerations. Ista presented are averages for gasolines. Most States will preclude by regulation floaters for material a ceeding 11 psia vapor pressure at highest ambients. Tank car or tank truck vapor displacement must be controlled in most states. Viable control techniques involve bottom. loading, incineration, vapor recovery, forced return to storag() that, adsorption and absorption. EPA administrators generally accept 90% reduction of uncontrolled emissions. 

Compiled by: P. Budininkas

Date: April 1976 Revised by:

Date.



## o. XYLENE

SIGNAL WORD

CAUTION

COMMON SYNONYMS AND TRADE NAMES

Aylol

1,2 Dimethylberizere

DESCRIPTION

Colorless watery liquid.

Sweet, characteristic aromatic odor.

Floats on water

CHEMICAL FORMULA

0-C6H4(CH3)2

MOLECULAR WEIGHT

106.16

2. PHYSICAL PROPERTIES

Freezing Point: -13 °F (-25 °C)

Boiling Point: 292 °F (144 °C)

Density (Spec. Gravity) at  $68^{\circ}$ F ( $20^{\circ}$ C): 7.3 lbs/gal (0.880)

Kinematic Viscosity, at 77°F (25°C): SSU 28 (0.85cSt)

at 54°F (12 °C): SSU 29 (0.95 cSt)

Specific Heat, Btu/lb. 7 (cal/g C): 0.41

Coefficient of Thermal Expansion: per PF 0.000485

per <sup>C</sup>C 0.000873

Vapor Pressure: 1.5 psia (77.8 mm Hg) @ 167°F ( 75 °C)

°F ( 2.5 psia (125 mm Hg) € (ع

cF ( 11.0 psia (569 mm Hg) € (33

at 68°F (20°C) D.] psia (5 mm kg)

Solubility in Water, 2:

Solubility of Water in Commodity, 2:

Flammability

S. HAZARD DATA

Flashpoint: 63 9 ( 17 °C) CC 75°F (24°C) OC

Flarmatility Limits in Air. Volume 2: 1.1 - 7.0

Autoignition Temperature: 869 of (465 of)

Threshold Limit Value (TLV), ppm: 100

Short-Term Inhelation Limits: 300 ppm for 30 minutes

Gaer Threshold, pam: 0.5

NEPA Hazard Classification

Heelth . Reactivity

### 4. HAZARD ACTION

FIRE

Flammable. May be ignited by open flame, sparks, or heat.

Vapor is heavier than air and flashback along vapor trail may occur.

Vapor may explode if ignited in an enclosed area.

Extinguish with foam, dry chemical, or carpon pippide. Direct water stream may be ineffective.

Cool exposed containers with water.

	1	HARM	ACTION
	INHALED	Vapor irritating to mose, inroat and eyes.  If inhaled for prolonged period or at high concentrations will cause headache, confusion, dizziness, drowsiness, narcosis and may cause liver and kidney damage.	hove it fresh ein.  If theathing it difficult. to a  If theathing stops, apply on t  tion. Get medical attention in the noticed.
= EXPOSURE	SWALLOWED	Harmful if swallowed. Indestion will cause vomiting, disciness. Landominal pain, loss of consciousness. May cause liver and kidney damage. Less than lost may cause death.	Do NOT induce voriting. Have victim drink milk or water. Set medical attention.
	ON SKIN	Irritating to skin.	Remove contaminated clothing. Wash affected areas with soap and water. Launder contaminated clothing before reuse.
	IN EYES	Irritating to eyes. 043	Flush eyes with water for 15 minutes. Get medical attention.

5. PROTECTIVE MEASURES IN HANDLING

Have acequate ventilation.

Aveid prolonged breathing of vapor.

Avoid prolonged contact with skin.

keep containers closed and away from heat, snarks and open flame.

Hear ongoles or face shield and impervious gloves.

Air-line or self-contained respirator should be used if entry is me. Into an unventilated tank or an enclosed area containing large spill.

### 6. SPILL AND/OR EMERGENCY PROCEDURES

Secure all ignition sources.

Simi-off all lines involved in the emergency that are readily accessible.

Notify plant operations officer.

lise water fop nozzles to cold down vapor.

Notify U.S. Coast Guard and local health and pollution control agencies, if required.

### 7. SPILL TREATMENT REOLIREMENTS

Use foam to minimize vapo ization.

Pump off spilled material to containment at separator. Residue should be absorbe by Vermiculite or other absorbant material, placed into closed containers, and transported away for final dis osition.

### 8. COMPATIBILITY WITH M. TERIALS

a. Compatibility with:

Aluminum

b. Preferred Materials for:

Tanks

Compatible Steel

Compatible

steel Pipes

Compatible bress

Pumps all iron or bronze fitted - 13 - 14 - 14

Compatible Stainless Steel

Polyethylene crosslinken; Hoses

Compatibility Chart o.

Viton JM-60 Gaskets -

Compatible with the sual construction materials. Attacks natural rubber.

### 9. STORAGE CONSIDERATIONS

Venting: Sid. pressure-veluum vent may be used on fixed roof tanks.

## 10. LABELING REQUIREMENTS

Flammable liquid

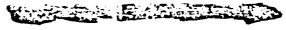
#### 11. CLEANING PROCEDURES

= CP-9

Drain all residual material, steam clean; then remove the concersate air dry.

(Details of the cleaning procedure are given in Appendix)

### 12. MISCELLANEOUS



## m- XYLENE

BIGNAL WORD

NO. X-2

CAUTION

COMMON SYNONYMS AND TRADE NAMES

Xvlol

1.3 Dimethylbenzene

DESCR'TION

Colorless watery liquid.

Sweet, theracteristic aromatic odor.

Floats on water.

CHEMICAL FORMULA

= m-C6H4(CH3)2

**MOLECULAR WEIGHT** 

106.16

### 2. PHYSICAL PROPERTIES

Freezing Point: -54 °F (-48 °C)

282 °F (139 °C) Boiling Point:

Density (Spec. Gravity) at  $68^{\circ}$ F (20°C): 7.2 lbs/gal 0.864) Kinematic Viscosity, at 77°F (25°C): SSU 27 (0.67:St)

at 54 °F ( 12 °C): SSU 28 ( 0.75 ±St)

Specific heat, Btu/lb. 7 (cal/g °C) 0.4]

Coefficient of Thermal Expansion: per CF 0.000494

per C (...000889

Vapor Pressure: 1.5 ps1a (77.8 mm Hg) ₱158 °F (70 °C)

2.5 psia (129 mm Hg) @

°F ( 11.0 psia (569 mm. Hg) @

at 68°F (20°C) D.12 psia (6.0 mm mg)

Solubility in Water, 2: 0.01

Solubility of Water in Commodity, %: 0.03

### 3. HAZARD DATA

Fleshpoint: 77°F (25°C)

Flammability Limits in Air, Volume T: 1.1 - 6.4

Autoignition Temperature: 986 of (530 oc) Threshold Limit Value (TLV), ppm: 100

Short-Term Inhelation Limits: 300 ppm for 30 minutes

(Mor Threshold, ppm: 0.5

NFPA Hezard Classification

Health.

3

Flammability

Reactivity

### 4. HAZARD ACTION

FIRE

ilammable. May be ignited by open flame, parks, or neat.

Vapor is heavier than air and flashback along vapor trail may occur.

Vapor may explose if ignited in an enclose area.

Extinguish with foam, dry chemical, or car on dioxide. Direct water stream may be ineffective.

Lool exposed containers with water.

ł		HARM	ACTION
	INHALED	Valor irritating to mose, th dat and eyes.  If inhaled for prolonded per od or at high concentrations will cause he dache, confusion, dizziness, drowsiness, narco is and may cause liver and kidney damage.	Move to fresh air.  If breathing is difficult, pro- If breathing stops, apply action.  tion. Get medical attention if the process of the proc
= EXPOSURE	SWALLOWED	hermful if swallowed. Ingestion will cause vomitin., giddiness, abdominal pain, loss of cons iousness. May cause liver and kidney damag. Less than 1 or. may cause death.	Do NOT induce vomiting. Have victim drink milk or water. Get medical attention.
	OH SKIN	Irritating to skin.	Remove contaminated clothing. Wash affected areas with soap and water. Launder contaminated clothing twice rise.
	IN EYES	irritating to eyes.	Flush eyes with water for 15 minutes. Get medical attention.

045

5. PROTECTIVE MEASURES IN HANDLING 5.2 Have adequate ventilation.	••
Avoid prolonged breathing of vapor.	
Avoid prolonged contest with skin.  keep contenners closed and away from heat, sparks an	Coper flame.
hear googles or face stield and impervious cloves.  Air-line or self-contained respirator should be used	If entry is made into an unventilated tank or an erclosed area
containing large spill.	
6. SPILL AND/OR EMERGENCY PROCEDURES	
Secure all ignition sources.	₹. 
Shut-off all lines involved in the emergency that are Notify plant operations officer.	e readily accessible.
Use water foo nozzies to hold down vapor. Notify U.S. Coast Guard and local health and pollution	DD Cortani consider of manufact
WOLTHY D.S. COASE GUARC AND TOCAT NEATEN AND POTIDENT	on control agencies, it requires.
7. SPILL TREATMENT REQUIREMENTS	
7. SPILL TREATMENT REGULTEMENTS	·
Use foam to minimize vaporization.  Pump off spilled material to containment at separator	· •
Residue should be absorbed by Vermiculite or other ab	osorbant material, placed into closed containers, and trans-
ported away for final disposition.	•
B. COMPATIBILITY WITH MATERIALS	
a. Compatibility with:	b. Preferred Materials for:
Steel - Compatible	Tanks - steel
Aluminum - Compatible	Fipes - steel
Brass - Compatible	Pumps - all iron or bronze fitted
Stairless Steel - Compatible	Hoses - Polyethylene crosslinked; Vicon
Compatibility Chart No. 10	Gaskets - JM-60
Compatible with the usual construction materials	
9. STORAGE CONSIDERATIONS	<del></del>
Venting: Std. pressure-vacuum vent may be used on fin	wed monf tanks
ID. LABELING REQUIREMENTS	·
Flamable liquid.	
11. CLEANING PROCEDURES	
CP-9 or CP-7 Drain all resid	lual material, steam clean, then remove the concensate and the a cetergent solution.
- (Details of the cleaning	procedure are given in Appendix) =
2. MISCELLANEOUS	
	(£
	046
	V 4 U

Commiled by:

Date:

Revised by:

Date:

## P-XYLENE

SIGNAL WOT:

CAUTIO.

COMMON SYNONYMS AND TRADE NAMES

Xylol

1.4 Dimethylbenzene

DESCRIPTION

Coloriess watery liquid.

Sweet, characteristic aromatic odor.

Floats on water.

CHEMICAL FORMULA

P-CEHE(CH3);

MOLECULAR WEIGHT

10€.16

### 2. PHYSICAL PROPERTIES

freezing Point: 56 °F ( 13 °C)

Boiling Point: 281 °F (138 °C)

Density (Spec. Gravity) at 68°F (20°C): 7.2 lbs/gal (0.851)

Kinematic Viscosity, at 77°F (25°C): SSU 28 (0.70cSt)

at cF ( cc): SSU 28.5 (0.80 cSt)

Specific Heat, Btu/lo. 7 (cai/g C): 0.42

Coefficient of Thermal Expansion: per EF 0.000543

per °C 0.000977

Vapor Pressure: 1.5 psia (77.8 mm Hg) # 158°F (75 °)

2.5 psia (129 mm Hg) & F (

11.0 psia (569 mm Ha) @ "F ( ')

at 68°F (20°C) 0.13 psia (6.7 mm Hc

Solubility in Water, 2: insoluble

Solubility of Water in Commodity, %:

### 3. HAZARD DATA

Flashpoint: 61 9 ( 27 9C) CC

Flammability Limits in Air. Volume 2: 1.1 - 6.6

Autoignition Temperature: 870 of (466 oc)

Inneshold limit Value (TLV), ppm: 100

Short-Term Inhalation Limits: 300 ppm for 30 minutes

Soor Threshold, ppm: 0.5

NFPI Hezero Clessification

ation 5 . Health 2 6 Reacti fly

Flamability

## 4. HAZARD ACTION

FIRE

Flammatle. May be ignized by open flame, sparks, or heat.

Vapor is heavier than air and flashback alone vapor trail may occur.

vapor may explode if ignited in an enclosed area.

Extinguish with foam, any chemical, or carbon dispide. Direct water stream may be ineffective.

Cool exposed containers with water.

1		MARM.	ACTION
	INHALED	lapor innitating to mose, throat and evel.  If inhaled for prolonged period or at high concentrations will cause headache, confusion, diginess, drowliness, hardosis and may cause liver and kidney damage.	Move to freenant.  If preathing is difficult.  If preathing stops, apply and tion. Get medical attention in
= EXPOSURE	SWALLOWED	harmful if swallowed. Incestion will cause vomiting, giddiness, abdominal pain, loss of consciousness. May cause liver and Figney damage. Less than 1 oz. may cause death.	Dr NOT induce vomiting. Have victim drink milk or welet. Get medical attention.
	OH SKIN	Irritating to skin.	Remove contaminated clothing. Wash affected areas with soap and water. Launder contaminated clothing before reuse
	IN EYES	Irritating to eyes.	Flush eyes with water for 15 minutes. Bet medical attention.

5. FROTECTIVE MEASURES IN HAND	ING CO		•	
Have accounte ventilation.	5-2		• *	
Avoic prolonger breathing of vector.  Avoid prolonger contact with sim.				
Arej containers closed and webs fro	or neet, sperks and open flame.			E
Wear outples or face shield and in Air-line or self-contained restination	tervious proves. for should be used if entry is me	ne into ar unventi	lated tank or an enclosed er	. •
containing large spill.			<u></u>	
6. SPILL AND/OF EMERGENCY PROC	EDURES		± €,	
Secure all ignition sources.	4/3	24.5.	** **	
Shut-off all lines involved in the Actify plant operations officer.	•	· ILIE.	•	
Use water foo neggles to hold down hetify U.S. Coast Guard and local r		ies, if required.		
	<del></del>			
7. SPILL TREATMENT REQUIREMENTS	5			
Use foam to minimize vaporization. Fump off 1:11led material to contain	imment At separator	.•		
Residulas smould be absorbed by Ver		ial, placed into	losed containers, and irans-	
ported away for final disposition.				
			•	
B. COMPATIBILITY WITH MATERIALS				
		b Buckeyerd Note	t.t	
a. Compatibility with:		b. Preferred Mate		
Steel - Compatible		Tanks -	steel	
Funitur - Compatibl	t	Pipes -	steel	4
Eress - Competible	ŧ	Pumps -	all iron or bronze fitter	(
StairGess Steel - Compatible	£	Hoses -	Polyethylene crosslinked: Vitun	
			JM-60	
Compatibility Chart No. 10		Gaskets -		
	truction materials. Attacks mate			
Compatitle with the usual cons	truction materials. Attacks mate			
Condatitle with the usual const S. STORAGE CONSIDERATIONS Venting: Std. pressure-vacuum vent i	may be used on fixed roof tanks.	ral rubber.		<del></del>
Co-patitle with the usual const	may be used on fixed roof tanks.	ral rubber.	ils and/or insulation will	
Compatible with the usual const E. STORAGE CONSIDERATIONS Venting: Std. pressure-vacuum vent i because of its high freezing point,	may be used on fixed roof tanks.	ral rubber.	fls and/or insulation will	
Condatitle with the usual const E. STORAGE CONSIDERATIONS Venting: Std. pressure-vacuum vent a Secause of its high freezing point, be required.	may be used on fixed roof tanks.	ral rubber.	ils and/or insulation wi <sup>l</sup> l	
Condatitle with the usual const 6. STORAGE CONSIDERATIONS  Venting: Std pressure-vecuum vent a because of its high freezing point, be required.	may be used on fixed roof tanks.	ral rubber.	ils and/or insulation will	
Condatitle with the usual const E. STORAGE CONSIDERATIONS Venting: Std. pressure-vacuum vent a Secause of its high freezing point, be required.	may be used on fixed roof tanks.	ral rubber.	ils and/or insulation will	
Condatitle with the usual constitue of the constituent of the pressure-vector vent to because of its high freezing point, be required.	may be used on fixed roof tanks.	ral rubber.	ils and/or insulation will	
Condatitle with the usual constitue of the constituent of the pressure-vector vent to because of its high freezing point, be required.	may be used on fixed roof tanks.	ral rubber.	ils and/or insulation will	
Conditite with the usual constituents  S. STORAGE CONSIDERATIONS  Venting: Std. pressure-vectum vent in Seconds of his high freezing point, the required.  ID. LABELING REDUIREMENTS  Frammatie liquid	may be used on fixed roof tanks. pideline and pump heat tracing a	nd tank heating co		
Conditite with the usual const  B. STORAGE CONSIDERATIONS  Venting: Std. pressure-vectum vent is because of its high freezing point, be required.  ID. LABELING REDUIREMENTS  Flammable liquid	may be used on fixed roof tanks. Pideline and pump heat tracing o	nd tank heating co		
Conditite with the usual const  D. STORAGE CONSIDERATIONS  Venting: Std. pressure-vecuum vent in Secause of its high freezing point, the required.  De required.  10. LABELING REQUIREMENTS  Frammable liquid  11. CLEANING PROCEDURES  CP-9 of CP-7	Drain all residual misterial air ory; or wash with a dete	nd tank heating co	remove the concensate s:	
Conditite with the usual const  E. STORAGE CONSIDERATIONS  Venting: Std. pressure-vecuum vent is because of its high freezing point, be required.  ID. LABELING REQUIREMENTS  Flammable liquid  II. CLEANING PROCEDURES  CP-9 or CP-7  (Detail	may be used on fixed roof tanks. pideline and pump heat tracing a	nd tank heating co	remove the concensate s:	
Condatitle with the usual const  D. STORAGE CONSIDERATIONS  Venting: Std. pressure-vectum vent is because of its high freezing point, the required.  De required.  TO LABELING REQUIREMENTS  Transactive liquid  TO CLEANING PROCEDURES  CP-D or CP-7  (Detail	Drain all residual misterial air ory; or wash with a dete	nd tank heating co	remove the concensate s:	
Conditite with the usual const  D. STORAGE CONSIDERATIONS  Venting: Std. pressure-vecuum vent in Secause of its high freezing point, the required.  De required.  10. LABELING REQUIREMENTS  Frammable liquid  11. CLEANING PROCEDURES  CP-9 of CP-7	Drain all residual misterial air ory; or wash with a dete	nd tank heating co	remove the concensate s:	

NO. V-1 1. COMMODITY SIGNAL WORD V. M. & P. NAPHTHA CAUTION CHEMICAL FORMULA COMMON SYNONYMS AND TRADE NAMES DESCRIPTION Colorless liquid - Mixture of hydrocarpons Petroleum solvent Gasoline-like odor Light naphthe Ligrofn Floats on water Fainzer's naphtha **MOLECULAR WEIGHT** benzine Mixture 75: Naphtha Suesia Naphtholite 2. PHYSICAL PROPERTIES Freezing Point: Below-50 F (Below-46 C) Vapor Pressure: 1.5 psia (77.8 mm Hg) @ 105 cf ( 41 °C) Boiling Point: 200-300 F (93-149 C) 2.5 psia (129 mm Hg) @ Density (Spec. Gravity) at 68 F (20°C): 5.6-7 26 lbs/gal (0.67-0.87) 11.0 psta (569 mm Hg) @ 5F ( (23 Kinematic Viscosity, at 77°F (15°C): SSU 4E ( 6 cSt) at 68°F (20°C) 0.5 psia (26 mm Hg) at 'F ( C): SSU Solubility in Water, 2: Insoluble Specific Heat, Etu/lt. T (cal/g "T): D.4E Solubility of Water in Commodity, 1: Insoluble Coefficient of Thermal Expansion: per CF 3. HAZARD DATA Flammability NFPL Hazard Flashpoint:  $20-45^{\circ}F$  (-7 to  $7^{\circ}C$ ) CC Classification 3 Flammatility limits in Air, Volume 1: Futcignition Temperature: 450 of ( 232°C) Heelth . Reactivity Inteshold Limit Value (7LV), ppm: 500 (est.) Short-Term Innalation Limits: 500 ppm for 30 minutes Door Inteshold, pom: 4. HAZARD ACTION May be ignited by heat, sparks, or then flame. May explode if ignited in an enclosed area. Vapor is heavier than air and flash, act along vapor trail may occur. Fartially filter containers may explode in fire. FIRE Extraquish with feath, any chemicals, or carbon dioxide. Cool exposes containers with water. I ARM **ACTION** Stigntly irritating is eyes, nose and thrust. Exposures to low concentrations or for short time has little effect. High concentrations Move to trest etr. If preatring is difficult, give .
If preatring has Stopped, ectivities INHALED will cause dizziness , headache, anesthesia, respiration. If viguio in lungs, get medical attention coma, and respiratory arrest. Liquid in lungs will cause pulmonary edema immesiately. DO NOT INDUCE VOMITING. Harmful if swallowed. Dirritation of mouth, esophagus and stomach; Have victim drink milk or water. SW'ALLOWED If appreciable quantity swallo- - tet vomiting, diarrhea; symptoms as inhaleo. Setween one ounce and a pint may cause death. medical attention and stomach i EXPOSURE |Slightly irritating to skin on long exposure. Remove contaminated clothing. Wash affected areas with soap and water. ON SKIN

irritating to eyes.

IN EYES

Flush eyes with water for 15 minutes.

Get medical attention.

049

CP-7 or CP-9

(Details of the cleaning procedure are given in Appendix)

### 12. MISCELLANEOUS

Various orades of V M & P Naphtha will behave similarly; however, their volatilities, densities and flash points hay wary depending on blends used.

050

Date: August 1976 Revised by: Committed by: P. Budininkas

Date:

A. Marie

•	•	HANDLING A	ND SAFETY INFORMA	TION ON COMMOD	PITIES	NO. T-5
1 COMM	OPI A	,	TOLUEN	1E		SIGNAL WORD
						1
COMMON	SYNONYMS A	ND TRADE NAMES	DESCRIPTION Colorless liquid		CHEMICAL FO	DRMULA
Methylber Methylber	1020		Pleasant odor Floats on water		MOLECULAR	WEIGHT
Frieny I nie 1	itian <u>e</u>		Flammable		92.14	W.C.Giff
	CAL PROFERTIE		<del></del>	Vapor Pressure: 1	1.5.ps1a (77.8 mi	Hg) # 115 °F (46 °C)
freezino Builing D	Frant: _13! Print: 231 <sup>C</sup> F (	9 °F (-95.0 °C)		7	?.5 ps:a (129 mm l	lg) ₱
Density (	Spec. Gravity)	at 68 <sup>C</sup> F (20 <sup>O</sup> C): 7.	2 lbs/gal (0.867)	11	1.0 psia (569 mm )	( °C)
Kinema tiro		77°r (25°c): SSU 2	6 (.63 c5t)	at	. 68°F (20 °C) .4	5 osia (23 mm Hr
Specific		tu/1b, <sup>O</sup> F (0,440 cal	/g. <sup>D</sup> C)	Solubility in Wat	er, 2: 0.15	
		xpansion: 0,000574 0,00103	per <sup>D</sup> f	Solubility of Wat	er in Commodity.	Z· 0.05
Tio eshilid Siert-Te <del>n</del>	timat Value (T > Inhalation Li Shold, pum:	mits: 600 ppm, for 3	3: min .	<u>.</u>	Health (	0 React IN
FIRE	Vapor may ex Extinguish a ineffective	y occur along wappr flode if ignited in with dry chemicals, f on fire. Containers with wat	an enclosed area. Dam, or carbon diox:		•	-
		<b>!</b>	HARM	1	ACTION	
	INHALED	If innaled for projections will	o nose, throat and exionged period or at the cause nausea, vunition, loss of conscious	ing. If breath ing. If breath sness. tion. Ge	resh air. ing is difficult. ing stops, apply i medical attenti is notice:	8771111
XPOSURE	SWALLOWED	ation.	d. Harrnea, depressed r pin1 may cause deat	espir- have vict	Duce voritting. ir orine water or al attention.	п.з 1 .
	ON SKIN	Causes drying and i	rritation of skin.	Remove con Wash affect	ntaminated Elothi cted areas with s	ng. Ogi end water
	IN EYES	Irritates eyes; can	cause corneal burns		n water for 15 mi al attention	n.

Toluene vapors are more toxic than co	omparable hydrocarbons, and prolonged inhalation should be avoided.	
2. MISCELLANEOUS		
	ls of the cleaning procedure are given in Appendix)	
CD 0 - CD 7	Drain all residual material. Steam clean tank; then remove the condensate and air dry. Or wash with a detergent solution.	
1. CLEANING PROCEDURES	Desir pll model of model of	. <b></b>
Flammatie Inquid		
O. LABELING REQUIREMENTS		
Venting: Std. pressure-vacuum vent ma	encatory on fixed roof tanks.	
9. STOFIAGE CONSIDERATIONS		
Compatibility Chart No. 10 Contatible with most construction	Gaskets - JM-60 ion materials; but attacks rubber.	
Stainless Steel - Compatible	le Hoses - Polyethylene crosslinked;	Vito
Bress - Compatible	le Pumps - all iron or bronze fitted	
Aluminum - Compatibl	le . Pipes - steel	
Sieel - Compatibl	le Tanks - steel	
a. Compatibility with:	b. Preferred Materials for:	
final disposal.  B. COMPATIBILITY WITH MATERIALS	The second of th	
Cover with foam to reduce vaporizating to containment at separator.  Absorb residual by Vermiculite or of	ion.  Ither solid absorber, load into clused containers and transport away for	
7. SPILL TREATMENT REQUIREMENTS		
Notify plant operations officer. Use water for nozzles to hold down to		
Secure all ignition sources.	emergency that are readily accessible.	
containing large spill.  6. SPILL AND/OR EMERGENCY PROCE		
Air-line or self-contained respirati	for should be used if entry is made into an unventilated tank or an enclosed e	res
Wear pog. es or face shield and imp	Gervious cloves.	

HANDLING AND SAFETY INFORMATION ON COMMODITIES

1. COMMODITY SIGNAL WORD SAFFLOWER OIL ATTENTION CHEMICAL FORMULA DESCRIPTION Mixture Dily, golden yellow liquid Very slight odor Floats on water MOLECULAR WEIGHT ... Mixture 2. PHYSICAL PROPERTIES Freezing Point: Above nof (-18°C) Vapor Pressure: 1.5 ps1a [77.8 mm Hg] # **PC1** 2.5 psia (129 mm Hg) # F ( Boiling Point: About 600°F (316°C) 41 Density (Spec. Gravity) at 68°F (20°C): 7.72 7bs/gal (0.925 m) 11.0 psia (569 am Hg) # 44 °C)

Kinematic Viscosity, at 77°F (25°C): SS. ( cSt) at 68°F (20°C) «0.1 psia ( <5 mm Hg) at "f ( "C): S:U ľ cSt) Solubility in Water, 3: Negligible Specific Heat, Btu/lb. 7 (cal/g %): Luefficient of Thermal Expension: per F - Solubility of Water in Commodity, 1: hegligible ... and the second of the second of the second of the second of Jer DE 3. HAZARD DATA Flammability NFPA ... Fleshpoint: Above 200°F (Above 93°C) EC Hezero . Classification -Flammability Limits in Rir. Yolune T: Not established 4 1 Autoignition Temperature: Dr, Health ( Reactivity Threshold Limit Value (TLV), ppm: - Not established Short-Term Inhelation Limits: Door Inteshold, pm: 4. HAZARD ACTION Combustible. Extinguish with form, dry chemical or carbon dioxide. FIRE Cool exposed containers with water. ACTION MFAH Because of low vapor pressure, no harm at normal temperatures. INHALED None; edible SWALLOWED EXPOSURE Lold, none. ' Heated product may cause heat burns and DH SKIN blisters. Flush with water for 15 minutes. May irritate e es. IN EYES

### SAFFLOWER OIL

			- 4	•
S. PROTECTIVE	MEASURES I	in hani	CING	- S-D

Have adequate ventilation. Leep containers closed and away from heat.

## 6. SPILL AND/OR EMERGENCY PROCEDURES

Shut-off all lines involved in the emergency that are readily accessible. Notify plant operations officer. Notify U.S. Coast Guard and local health and pollution control agencies, if required.

## 7. SPILL TREATMENT REQUIREMENTS

and the state of t

Pump off spilled material to containment at separator.

Absorb residual by Vermiculite or other solid absorbent and transport for final disposal.

### 8. COMPATIBILITY WITH MATERIALS

a. Compatibility with:

Sieel - compatible

Aluminum - compatible:

Brass - - comatible

Steinless Steel - corpatible

Compatibility Chart No. 3

b. Preferred Naterials for:

Tanks - steel

Fipes - steel

Pumps - all-iron or bronze fitted

Hoses - Polyethylene prosslinked; Butyl

Gaskets - DM-60

### 9. STORAGE CONSIDERATIONS

Venting: Std. pressure-vacuum vent may be used on fixed moof tanks.

Heating may be required in colder regions to make the product pumpable; thus heat coiled and/or insulated tense and heat-traced piping and pumps will be required.

Avoid overheating.

### 10. LABELING REQUIREMENTS

None required.

### 11. CLEANING PROCEDURES

Drain tank, wash with a detergent solution and air dry.

CP-7

Details of the cleaning procedure are given in Appendix)

## 12. MISCELLANEOUS

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Compiled by: P. Budininkas Date: August 1976 Revised by:

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Date:

NO. 0-2 1. COMMODITY SIGNAL WORD ODORLESS SOLVENT CAUTION CHEMICAL FORMULA DESCRIPTION COMMON SYNONYMS AND TRADE NAMES Mixture Colorless liquid Doorless mineral spirits Gasoline-like odor Floats on water **MOLECULAR WEIGHT** Mixture 2. PHYSICAL PROPERTIES Freezing Point: <-85 °F (<-65 °C) °C) Vapor Pressure: 1.5 psia (77.8 am Hg) @ Boiling Point: 358-470°F (181-243°C) 2.5 psia (129 mm Hg) @ 41 ( يځ Density (Spec. Gravity) at 68°F (20°C): 6.35-6.42 lbs/gal (0.76-0.77) <sup>C</sup>F { 11.0 psia (569 mm Hg) ₹ Kinematic Viscosity, at 77°F (25°C): SSU at 68°F (20°C) D.02 psia (1.1 m Hg) ( cSt) et 100°F (38 °C): SSU 30-33 (1.4-2.0 cSt) Solubility in Water, %: Specific Heat, Btu/Ab. 4-(cal/g 5): . . . Solubility of Water in Commodity. 1: Insoluble Coefficient of Thermal Expansion: per DF per C 3. HAZARD DATA Flammability. NEPA Fleshpoint: 130-155°F (54-68°C) CC Hazard Classification Flammability Limits in Air, Volume 2: 1-6, estimated (Estimated) of ( OC) Autoignition Temperature: Health & Threshold Limit Value (TLV), ppm: estimated 500 Short-Term Inhalation Limits: Door Threshold, ppm: 4. HAZARD ACTION Partially filled containers may explode in fire. FIRE Extinguish fire with foam, dry chemical, or carbon dioxide. Cool exposed containers with water. HARM ACTION immitation of eyes, mose, and incoal if present in high concentrations; also meadache Move to irest bir. If liquid yets anto lungs, get dec. INHALED and shight giddiness.attention immediately. liquid in lungs will cause rapidly developing pulmonary edema. Harmful if swallowed. DO NOT INDUCE VOMITING. Will cause mausea, vomiting, cramps, depress-Give milk or water. SWALLDWED lion of central nervous system up to come and Get medical attention. even death; also possible kidney and liver EXPOSURE damage. About one pint will cause death. Slightly irritating on long exposure. Remove contaminated clothing. Wipe off and wash affected areas wath car

Solvent action may remove natural oils.

Irritation of eyes.

and water.

057

Flush with water for 75 minutes.

Get medical attention.

DN SKIN

IN EYES .

5.	PROTECTIVE	MEASURES IN HANDLING	- S-2-
•			

Have adequate vnetilation.

Avoid prolonged breathing of vapor.

Avoid prolonged contact with skin.

Keep containers closed and away from heat, sparks and open flame.

wear goggles or face shield and impervious gloves.

Air-line or self-contained respirator should be used if entry is made into an unventilated tank or an enclosed area containing large spill.

## 8. SPILL AND/OR EMERGENCY PROCEDURES

Secure all ignition sources.

Shut-off all lines involved in the emergency that are readily accessible.

The second secon

Notify plant operations officer.

Notify U.S. Toest Guard and local health and pollution control agencies, if required.

### 7. SPILL TREATMENT REQUIREMENTS

Pump off spilled material to containment at separator.

Absorb residual by Vermiculite or other solid absorber, transfer into closed containers and transport for final disposal.

### B. COMPATIBILITY WITH MATERIALS

...a. Compatibility with:

b. Preferred Materials for:

Steel - compatible

Tanks - steel

Aluminum - compatible

Pipes - steel

Brass - compatible

. Pumps - all-iron, centrifugal or bronze fitted

Stainless Steel - compatible

Hoses - Polyethylene crosslinked; & ton

\_

Buna-N; buty7

Ecompatibility Chart No. 9

Gaskets - JM-60

Comparible with all construction materials.

### 9. STORAGE CONSIDERATIONS

Venting: Sid. pressure-vacuum went may be used on fixed roof tanks. Return bends normally acceptable. -

### 10. LABELING REQUIREMENTS

None required.

### 11. CLEANING PROCEDURES .

Drain tank, steam, remove condensate and air dry; or wash with a deterger: solution.

CP-9 or CP-7

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2 2 \*\*

## 12. MISCELLANEOUS

Diorless solvent is a mixture of paraffins and mapthenes in various proportions; check with manufacturer for specific yapor pressure data.

058

Compiled by: P. Budininkas .

Date: August 1976 Revised to:

Date:

## METHYL ALCOHOL

SIGNAL WORD

CAUTION

COMMON SYNONYMS AND TRADE NAMES

Methanol Wood Alconol Wood Spirit Wood Naphtha Carbinol Columbian Spirit Methyl Hydroxide

Colorless liquid Alcohol odor Mixes with water Flammable

DESCRIPTION

CHEMICAL FORMULA

CH3OH .-

**MOLECULAR WEIGHT** 

2. PHYSICAL PROPERTIES

Freezing Point: -144 DF (-97.8 DC)

Boiling Point: 148 PF (64.5 OC)

Density (Spec. Gravity) at 68°[ (20°C): 6.6 lb:/gal (0.792)

Kinematic Viscosity, at 77°F (25°C): SSU 28 (.77 cSt)

of ( oc): SSU

Specific Heat: 0,599 Btu/lb. F (0,599 cal/g. %) Coefficient of Thermal Expansion: 0,000667 per DF

0.00120 per (2

Vapor Pressure: 1.5 psia (77.8 mm Hy) # 61 0 (12)()

nomina on **tr⊕**ikagan

7.5 psia (129 em Hg) # 39 1 126'C)

11.0 psia (569 mm Hg) P136 Dr (5ED()

at 68°F (20°C) 1.86msia f 96 am tin)

Solubility in Water, T: Miscible in all proportions AND THE BOOK A SHOOT

Solubility of Water in Commodity, 2: Miscible in all proportions ·

3. HAZARD DATA

flashpoint: 54 Df (12 CL)

Flammability limits in Air, Volume 7: 6.5 - 16.5

Autoignition Temperature: 678 DF (470 DE)

Threshold Limit Value (TIV): 200

Short-Term inhalation limits: Data not available

Door Threshold, pum: 100

NEPA Hazard Classification Health :

Reactivity

Flanmability

### 4. HAZARD ACTION

FIRE

May be ignited by sparks, heat, or open flame. Vapor may explose if ignited in an enclosed area. Flashback along vapor trail may occur.

Extinguish with water spray dry the micals, alcohol foam, or carbon dioxide.

Tool exposed containers with water

	1 '		
		1 F.ARM	ACTION
-	INHALED	Irritation eyes, nose, throat. Will cause headaches, fatigue, cifficult breathing, or loss of consciousness. Inhalation of large amounts may cause partial or total blindness or ceath.	Move to fresh air.  If breathing is difficult, give a respiration.  Get medical attention.
EXPOSURE	SWALLOWED	narmini if swallowed Similar to inhaled; also, redness or blueness of the face, abdominal pain, stupor, distur- bance of vision, unconsciousness. About one- half pint taken internally may cause death.	If conscious, have wictim drink water and induce womiting.  If unconscious, do nothing except less war.  Get prompt medical attention.
-	ON SKIN	Irritation of skin. May be absorbed through skin to give symptoms -as inhaled.	Remove contaminated clothing.  Wash affected areas with soap and water.  Launder contaminated clothing before reuse.
	IN EYES	Irritates the eyes. 059	Flush eyes freely with water for about 15 minutes.

2,,,,2,720,106		
5. PROTECTIVE MEASURES IN HANDLING S.2  Have adequate ventilation.	it rest	<del></del>
Avoid prolonged breathing of vapor.  Avoid prolonged contact with skin.  Yeep containers closed and away from heat, sparks and	,	
hear goggles or face shield and impervious gloves.  Air-line or self-contained respirator should be used to containing large spill.	entry is made into an unventilated tank	or an enclosed area
	<u></u>	
6. SPILL AND/OR EMERGENCY PROCEDURES		
Secure all ignition sources.  Shut-off all lines involved in the emergency that are shotify plant operations officer.  Use water fog nozzles to hold down vapor.  Notify U.S. Egast Guard and local health and pollution		7
MOLITY U.S. COUST GEBT BING TOCKT HOUSE, C. S. POTTOCION	CONTROL Syent les, in requires.	<u>.</u> 
7. SPILL TREATMENT REQUIREMENTS		SECULATION OF ASSESSMENT
Dangerous to aquatic life in high concentrations. May be dangerous if it enters water intakes. Flush with water and pump off diluted material to contain	rment.	STATE OF THE STATE
	•	ा नेत्रप्रदेश कर्षक्रमें कुरू र
B. COMPATIBILITY WITH MATERIALS		ografija (1944) i se
a. Tompatibility with:	p. Preferred Materials for:	
- Compatible	7anks - steel	
Aluminum - Conditional	Pipes - steel	in the State of th
Brass - Compatible	· · · · · · · · · · · · · · · · · · ·	or bronze fitted
Stainless Steel - Compatible	Hoses - Polyethyli	ene crosslinked;
Compatibility Chart No. 5 None-corrosive at normal conditions; except alumin	Geskets - JM-60	BR;Viton not suitable
9. STORAGE CONSIDERATIONS		
Storage temperature and atmosphere: ambient Venting: Std. pressure-vacuum vent mandatory on fixed m	of tenk.	e se
Because of high capar pressure, most states will require	a floating root tank.	
	<u> </u>	
ID LABELING REQUIREMENTS	و المحمد الله الله الله الله الله الله الله الل	
Flamable Tiquid		
III. CLEANING PROCEDURES		J. Chi. His
Drain tank, gasfre	mechanicall and zar dry.	•
Ch-S		
(Details of the cleaning p	ocedure are given in Appendix)	<u> </u>
2 N'ISCELLANEOUS	and the second second	•
Taken internally, it is a poison and cannot be made non- Because of possible delayed reaction, all cases of metha	poisonous by distillation or absorption of poisonous should be admitted to hospi	tal for observation.
Market and the second of the s	000	<del></del>
and the second of the second o	060	and the second

Revised by: ----

Date: .. \_\_\_\_\_.

8-44

Compiled by: P. Budininkas

Date: Morch 1976



CELANESE CHEMICAL COMPANY, INC.

1250 WEST MOCKINGBIRD LANE

DALLAS. TX 7524Z

PHONE: 214-689-4000

## METHANOL

### DESCRIPTION

Methanol, also called methyl alcohol and wood alcohol, is a clear, colorless liquid with an alcohollike odor. It will dissolve in water. Methanol is a flammable liquid. It does not readily react with other materials or itself.

### **EFFECTS ON PEOPLE**

Skin contact with the liquid does not result in irritation; however, skin contact should be avoided since methanol can be absorbed through the skin. Ingestion of the liquid (even in small quantities) can result in blindness or death. Exposure to the vapor will not cause blindness or other serious effects, but will cause drunkeness, nausea, and headaches.

### USES

Methyl alcohol is used extensively as an intermediate in producing other chemicals such as acrylates and formaldehyde. It is also used in various resins, gums, shellacs, waxes, and oils.

CAS No. 67-56-1 Rev. 0, 2/80

061

a malanggah digitalik din

1. COMMODITY SIGNAL WORD SOYBEAN OIL ATTENTION DESCRIPTION CHEMICAL FORMULA COMMON SYNONYMS AND TRADE NAMES Dily, pale yellow to brownish yellow viscous liquid . Mixture West characteristic odor **MOLECULAR WEIGHT** Floats on water Mixture 2 PHYSICAL PROPERTIES of the bill to state of the total Freezing Point: 10-19°F (-12 to -7°C) Vapor Pressure: 1.5 psia (77.8 mm Hg) ₽ Boiling Point: above 400°F (above 204°C) 2. psia (129 mm Hg) # Density (Spec. Gravity) at 68°F (20°C): 7.7 lbs/gal (0.92-0.93) 11. psia (569 mm Hg) ₽ Kinematic Viscosity, at 77°F (25°C): SSU 4600 (1000cSt) at 68°F (20°C) <0.1 psia (<5 mm Hg) 21 50 °F (10 °C): SSU 18500 (4000 cSt) Solubility in Water. 1: Negligible Specific Heat, Btu/lb. T [cal/g T]: approx. C.48 ..... Solubility of Water in Commodity, T: Wegligible Coefficient of Thermal Expansion: per of 3. HAZARD DATA Flammability NFPA HEZATE Flashpoint: 540 4 (282 90) DC Classification Flammability Limits in Air, Volume 2: Not established Autoignition Temperature: E33 °F (445 °C) · ealth d Reactivity Threshold Limit Value (TLV), ppm: Not established Short-Term Inhelation Limits: Coor Threshold, ppm: 4. HAZARD ACTION Extinguish with form, dry chamical or carbon dioxide. FIRE Cool exposed containers with water. MARM ACTION Secause of low vapor pressure, no tarm at INHALED "normal temperatures. hone: edible SWALLOWED EXPOSURE Cold, none. Heated product may cause heat burns and ON SKIN blisters. May irritate eyes. Flush with water for 15 minutes. IN EYES 062

### 10. LABELING REQUIREMENTS

None required.

### 11. CLEANING PROCEDURES

Drain tank, wash with a detergent solution and air dry.

CP-7

(Details of the cleaning procedure are given in Appendix)

### 12. MISCELLANEOUS

Flush eyes with water for 15 ranutes.

Set medical attention.

064

1. COMMODITY SIGNAL WORD PETROLEUM NAPHTHA CAUTION DESCRIPTION CHEMICAL FORMULA COMMON SYNONYMS AND TRADE NAMES Mixture Colorless liquid Petroleum ether Gasoline-like odor Benzin Petroleum benzin Floats on water **MOLECULAR WEIGHT** Mixture 2. PHYSICAL PROPERTIES Freezing Point: -99 F (-73°C) of ( Vapor Pressure: 1.5 psia (77.8 mm Hg) € PC ) Boiling Point: 135-207°F (60-97°C) 2.5 psia (129 mm Hg) @ FI 4 Density (Spec. Gravity) at 68°F (20°C): 5.2-5.8 lbs/gal (0.63-0.69) °F ( 11.0 psia (569 mm Hg) ₽ LC) Kinematic Viscosity, at 77°F (25°C): SSU at 68°F (20°C) (123 at "F ( "C): SSU Solubility in Water, %: Insoluble Specific Heat, Btu/lb. 7 (cal/g C): 0.48 Solubility of Water in Commodity, 7: insoluble-Coefficient of Thermal Expansion: per of 0.00072 per °C 0.00130 3. HAZARD DATA Flammability NFPA Hazard Flashpoint: <D 4 (<-18PC) CC Classification Flammability Limits in Air, Volume 2: D.9-6.D Autoignition Temperature: 550 °F (288 °C) Health . Threshold Limit Value (TLV), ppm: 500- depends on percent of aromatics present Short-Term Inhalation Limits: Intoxication by 7000 ppm for 5 minutes Door Threshold, ppm: 4. HAZARD ACTION Yery flammable. May be ignited by heat, sparks, or open flame. May explode if ignited in an enclosed area. Vapor is heavier than air and flashback zlong vapor trail may occur-FIRE Fartially filled containers may explode in fire. Extinguish with foam, dry chemicals, or carbon dioxide. Cop? exposed containers with water ------HARM **ACTION** Slightly irritating to eyes, nose and throat. Litesure to low concentrations or for short time has little effect. High concentrations Move to freen bir. If breathant is difficu If breathing has stooped, cor-INHALED will cause distiness, headache, annithesia, come, and restinatory arrest. Libuid in lungs will cause pulmonary edema. respiration. If lipuro in lungs, get meancal matters immediately. harmful if swallowed. DO NOT INDUCE VOMITING. have victim drink milk or water. [ Irritation of mouth, esophagus and stomach: SWALLOWED vomiting, diarrhea; symptoms as inhaled. If appreciable quantity swallower, get Estween one punce and a pint may cause death. medical attention and stomach lavage. EXPOSURE Slightly irritating to skin on long exposure. Remove contaminated Elathing. Wash affected areas with soap and water. ON SKIN :

irritating to eyes.

IN EYES

PROTECTIVE MEASURES IN HANDLING S-1	The same companies of the same	ئېپارل سام. د د
Avoid prolonged breathing of vapor.  Avoid prolonged contact with skin.		
keep containers closed and away from heat, sparks and open wear googles or face shelld.	مسر المع مسيع سي المداد	17.7
Air-line or self-contained respirator should be used if en containing large spill.	try is made into an unventilated tank or an enclos	ed area
6. SPILL AND/OR EMERGENCY PROCEDURES	COSC TRANSCOLAR GARAGES NAMED AND	
Secure all ignition sources.  Snut-off all lines involved in the emergency that are read		· Law Lin
Notify plant operations officer.	illy accessible. Spanis No.	1122
Use water fog nozzles to hold down vapor. Notify U.S. Coast Guard and local health and pollution con	trol agencies, if required.	\$ 65m
-	\$ 1.50 miles (1.50	
7. SPILL TREATMENT REQUIREMENTS	Cat Freezon as	रतद्. <b>६</b>
Apply form to minimize vapor formation.	g <mark>i</mark> liter — <del>For</del> carretie	•
Fump away spilled material to containment at separator. Absorb residual by Vermiculite or other dry absorbers, tra	never to rineed routainers, and transport for fina	
disposition.		· · · · .
	Harris State Control of the Control	
		i a sign
8. COMPATIBILITY WITH MATERIALS	and the state of t	
a. Compatibility with:	b. Preferred Materials for:	
Sieel - competible	Tanks - steel	
#luminum - compatible	Pipes - steel	
Brass - compatible	Pumps - all-iron or bronze fi	-
Stainless Steel - compatible		•
Epopatibility Thart No. 9	Hoses — Buna-N; Polyethylene	CTUSSTI
	Gaskets - OM-50	· : : ·
and the second of the second o		
B. STORAGE CONSIDERATIONS	and the second s	
Because of high vanor pressure at normal storage temperatur most states and limiting vapor pressure to less than 1.5 ps Venting: Std. pressure-vacuum vent mandatory on fixed roof	ii. for fixed rout tanks.	red in
		<u>S</u> gree
	to the state of th	
10. LABELING REQUIREMENTS	The second secon	
Flamable liquid.		
	The state of the s	· 
11. CLEANING PROCEDURES	्रिकेट अध्यक्तिक हैं। इसकेट अध्यक्तिक स्थापन	
Drain tank, pasfree	and air dry	٠.
CP-1 or CP-2	and the second s	•
والمراجع والمناف		
	ar was are clust at income a second at the contract of the con	
Details of the cleaning proce		
12. MISCELLANEOUS		:
	h wever, their boiling points and vapor pressures or will exceed 1.5 psia at normal ambient temperate lifting point range is the key. Heptane's poiling	tures;
12. MISCELLANEOUS  Various graces of petroleum naphtha will behave similarly; vary depending on blends used. Generally, the vapor pressure for vapor pressure of a given blend, check with customer.	h wever, their boiling points and vapor pressures or will exceed 1.5 psia at normal ambient temperate lifting point range is the key. Heptane's poiling	tures;

P. Budininkas . .:

		•				SIGNAL WORD
			PALM OIL			
•			I YEM OIL	-	<del></del>	ATTENTION
		_ •	Angel Comment of the		***	
~~***	J CYNYWYA AI	ND TRADE NAMES	DESCRIPTION		CHEMICAL F	ORLER A
		NU INAUE NAMES	Granular, yellow-orange	to direv-	Eixture	
Palm butter		brown fatty mass	_			
			Characteristic, similar	to violets	MOLECULAR	WEIGHT
			Floats on water		Mixtur	e
	. <u> </u>		no no margo prompo e como como es	j		· · · · · · · · · · · · · · · · · · ·
2. PHYSK	CAL PROPERTIE	\$	•		•	•
Freezing i	Point: 77-109°	F (25-43°C)	Vapor 1	Pressure: 1.5 t	s1a (77.12 mm H	g) P
Boiling P	oint: > 392 °F	{>200°C}	The MILLS Sewer		psia (129 am. H	·
Density (	Spec. Gravity)	at 168°F (20°C): 7.6	5 lbs/gal ( D.92 )	11.0	psia (569 mm. H	g) • °F ( °C
Kinematic		77°F (25°C): SSU	( c5t)	at 68	oF (20°C) Neg1	.psia (Neglmm Hg)
		of ( oc): SSU	( eSt) Solubil	lity in Water.	2: Slight	
=	Heat, Ztu/16. T					
Coefficien		xpansion: per <sup>0</sup> F	_	illy of Water 1	n Commodity, 2:	: 0.23
	• . • .	per C		••	,	• • • • •
	ity Limits in A	1°C) CC - 1r, Volume I: Not e: : 600°F (316°C)		Classificati		
Autoigniti Threshold Short-Terr	ity Limits in A ion Temperature Limit Value III m Inhalation Limit Inhalation Limit Inhalation Combustible.	ir, Volume 1: Not e : 600°F (316°C) (V), ppm: Not estab mits:	stablished Nished	<b>3.333 1.</b>		
Autoigniti Threshold Short-Terr Cor Thres	ity Limits in A ion Temperature Limit Value III m Inhalation Limit Inhalation Limit Inhalation Limit Inhalation Limit Inhalation Combustible. Extinguish wi	ir. Volume I: Not e : 600°F (316°C) LV). ppm: Not estab	Stablished  Tished  Tor carbon dinxide.	<b>3.333 1.</b>		
Autoigniti Threshold Shore-Terr Cor Thres  4. HAZARI	ity Limits in A ion Temperature Limit Value III m Inhalation Limit Inhalation Limit Inhalation Limit Inhalation Limit Inhalation Combustible. Extinguish wi	ir, Volume 3: Not established; (V), ppm: Not established; (th foam, dry chemical	Stablished  Tished  Tor carbon dinxide.	<b>3.333 1.</b>		
Autoigniti Threshold Shore-Terr Cor Thres  4. HAZARI	ity Limits in A ion Temperature Limit Value III m Inhalation Limit Inhalation Limit Inhalation Limit Inhalation Limit Inhalation Combustible. Extinguish wi	ir, Volume 3: Not established; (V), ppm: Not established; (th foam, dry chemical	Stablished  Tished  Tor carbon dinxide.	<b>3.333 1.</b> 1. 1. 1.		0 Feectivi
Autoigniti Threshold Shore-Terr Cor Thres  4. HAZARI	ity Limits in A ion Temperature Limit Value III m Inhalation Limit Inhalation Limit Inhalation Limit Inhalation Limit Inhalation Combustible. Extinguish wi	ir, Volume T: Not established to the stablished	Stablished  Tished  Tor carbon dioxide.	<b>3.333 1.</b> 1. 1. 1.	alth D	0 Ameriy
Autoigniti Threshold Shore-Terr Cor Thres  4. HAZARI	ity Limits in A ion Temperature Limit Value IT in Inhalation Linitation Linit	ir, Volume T: Not established to the stablished	Tished  Tor carbon dioxide.  The Harm  The pressure, no harm at	<b>3.333 1.</b> 1. 1. 1.	ACTION	0 Feective
Autoigniti Threshold Shore-Terr Cor Thres  4. HAZARI	ity Limits in A ion Temperature Limit Value III m Inhalation Limit Inhalation Limit Inhalation Limit Inhalation Limit Inhalation Combustible. Extinguish wi	ir, Volume T: Not entry the stable of the st	Tished  Tor carbon dioxide.  The HARM  The pressure, no harm at the state of the st	Hei	alth D	0 American
Autoigniti Threshold Shore-Terr Cor Thres  4. HAZARI	ity Limits in A ion Temperature Limit Value IT in Inhalation Linitation Linit	ir, Volume T: Not established to the stablished	Tished  Tor carbon dioxide.  The Harm  The pressure, no harm at	Hei	ACTION	0 American
Autoigniti Threshold Short-Terr Cor Thres 4. HAZARI FIRE	ity Limits in A ion Temperature Limit Value IT in Inhalation Linitation Linit	ir, Volume T: Not established to the stablished	Tished  Tor carbon dioxide.  The HARM  The pressure, no harm at the state of the st	Hei	ACTION	0 American
Autoigniti Threshold Short-Terr Cor Thres 4. HAZARI FIRE	ity Limits in A ion Temperature Limit Value IT in Inhalation Linitation Linit	ir, Volume 1: Not entry (316 °C)  LV), ppm: Not established:  th form, dry chemical containers with water  Because of low vapor normal temperatures	Tished  Tor carbon dioxide.  The HARM  The pressure, no harm at the state of the st	Hei	ACTION	0 American
Autoigniti Threshold Short-Terr Cor Thres 4. HAZARI FIRE	ity Limits in A ion Temperature Limit Value [Tin Inhalation Lin ishold, ppm: DACTION  Combustible, Extinguish will Look exposed  INHALED	ir, Volume 1: Not entry (316 °C)  LV), ppm: Not established:  th form, dry chemical containers with water  Because of low vapor normal temperatures	Tished  Tor carbon dioxide.  The HARM  The pressure, no harm at the state of the st	Hei	ACTION	0 American
Autoigniti Threshold Short-Terr Cor Thres  4. HAZARI  FIRE	ity Limits in A ion Temperature Limit Value [Tin Inhalation Lin ishold, ppm: DACTION  Combustible, Extinguish will Look exposed  INHALED	ir, Volume 3: Not end of the stable of the s	Tished  Tor carbon dioxide.  The HARM  The pressure, no harm at the state of the st	Hei	ACTION	0 Feactiv

S. PROTECTIVE MEASURES IN HANDON'S Have adequate ventilation. Keep containers closed and away from heat. 6. SPILL AND/OR EMERGENCY PROCEDURES Shut-off all lines involved in the emergency that are readily accessible. Notify plant operations officer. Notify U.S. Coast Guard and local health and pollution control agencies, if required. 7. SPILL TREATMENT REQUIREMENTS Pump off spilled meterial to containment at separator. Absorb residual by Vermiculite or other solid absorbent and transport for final disposal. B. COMPATIBILITY WITH MATERIALS a. Compatibility with: Preferred Materials for: -Steel --- -compatible : teel يد المرحمة المراجع والمراجع المراجع Aluminum compatible Pipes Eress compatible ill-iron or bronze fitted Pumps Stainless Steel competible i olyethylene crosslinked; Butyl Hoses 33 Impatibility Chart No. 34-60 \_ - · · · · Beskets -9. STORAGE CONSIDERATIONS Venting: Std. pressure-vacuum vent may be used on fixed roof tanks. Since feeting is necessary to make the product pumpable, hest-coiled and/or insulated tanks and heat-traced piping and pumps will be required. Avoid Dverheating. 10. LABELING REQUIREMENTS None required. 11. CLEANING PROCEDURES Drain tank, wash with a detergent solution and air dry.-CP-7 (Netails of the cleaning procedure are given in Appendix) in Turker 12. MISCELLANEOUS مدر دهنج عم

067

Compiled by: P. Budininkas --- Date: August 1976 Revised by:

Date:

	• :	HANDLINGA	ND SAFETY INFORMATION C	н соммоэн	NO. P-1
1. COMM	YTICC	PAI	LM KERNEI	OIL	SIGNAL WORD
COMMON Palm Nut		ND TRADE NAMES	DESCRIPTION  Nearly white semi-solid Characteristic odor Floats on water		CHEMICAL FORMULA Mixture  MOLECULAR WEIGHT Mixture
Freezing Boiling Po Density ( Kinematic Specific i	Spec. Gravity) Viscosity, at at Heat, Btu/lb, F	°F (26-30°C) 92°F (Above 200°C) at 68°F (20°C): 7.2 77°F (25°C): SSU	3 lbs/gal ( D.866 ) {	ressure: 1.5 p 2.5 11.0 at 60 it in Nater.	psia (77.8 mm Hg) # PF ( PC) psia (129 mm Hg) # PF ( PC) p:ia (569 mm Hg) # PF ( PC) 6°F (20°C) < D.7 psia (<5 mm Hg) %: Slight in Commodity, %: Slight
Flamebil Autoignit Threshold Short-Terr	t: 398 4 ( 20 ity Limits in 8	ir. Volume I: hot est :- PF ( PC) LV), ppm: Not esta	•	NFPA Hazard - Classificat	ion    Flammability
4. HAZARI	D ACTION	·		•••	
FIRE	Combustible. Extinguish wi Cool exposed	th foam, dry chemical containers with water	or carbon dioxide.	3 · · · · · · · · · · · · · · · · · · ·	
		1	HARM	· · · · · · · · · · · · · · · · · · ·	ACTION
-	\$NHALED	Eccause of low waponormal lemperatures	or pressure, no harm at		

None; edible

May irritate eyes.

Cold, none.
Hezted product may cause heat burns and blisters.

068

SW'ALLOWED

ON SKIN

IN EYES

EXPOSURE

Flush with water for 15 minutes

of Minister, 1995

e de la companya de l

S. PROTECTIVE MEASURES IN HANDLIN	G. S. O ALTA LEADER YELL	Control of the second	Att months &
Reep containers closed and away from	heat		
		•	
		**	•-
		<del></del>	
B. SPILL AND/OR EMERGENCY PROCED			
Shut-off all lines involved in the em Notify plant operations officer. Notify B.S. Coast Guard and local hea			
300m2 447304444	·· .		
\$ to 1.2			
	·		•
7. SPILL TREATMENT REQUIREMENTS			
Pump off spilled material to contains Absorb residual by Vermiculite or oth	er solld absorbent and transpor	t for final disposal.	
Files an Artist in College	• • • • • • • • • • • • • • • • • • • •	•	
the state of the late of the state of	•	***	
interest and interest	the Atlantage of		
	<del></del>	· <del></del>	<del></del>
B. COMPATIBILITY WITH MATERIALS			- ·
a. Ecopatibility with:		b. Preferred Materia	le for•
Steel - compatible	the state of the s		The second of a second of the
	♥n •v. 		
	· ·	Fipes - Stel	1
Bress - compatible		Pumps - all-	from or bronze fitted
Stainless Steel - competible	•	Hoses - Poly	ethylene crosslinked; Butyl
Compatibility Chart No. 13	· .		
Company of the company		Gaskets - JM-6	-
and the second s	The state of the s		
B. STORAGE CONSIDERATIONS			
Venting: Etd. pressure-vacuum vent maj	be used on Tixed roof Lanks		المراجع فحالك وم
Since heating is necessary to make the and pumps will be required.	product pumpable, hest-coiled	and/or insulated tenk	s and heat-traced riping
Avoid overheating.		-42324 - 12 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	
		•	
10. LABSLING REQUIREMENTS			
TO. EXCLUSIVE REGULARITY	e pe	<b>в</b> .	•
None required.	المتحدث والمتحدد والمتحدد والمتحدث المتحدد المتحدد والمتحدد المتحدد والمتحدد المتحدد والمتحدد والمتحدد والمتحد المتحدد والمتحدد وال	a <del>and a second and a second an</del>	entre de la companya
• •	The state of the s	· <b>克罗</b> 克斯···································	The same section of
11. CLEANING PROCEDURES			
The second secon	Drain tank, wash with a dete	enant-solution and air	siev.
CP-7	Dietii Conk, Wean with & Dese	gent zolation and oli	<b></b>
CP-3			emanusus
		M	in the state of th
[Details	of the cleaning procedure are	given in Appendix)	
12. MISCELLANEOUS T		1.65 - 1.55 - 1.	
			A PROPERTY OF THE PARTY OF THE
	ا الله الله الله الله الله الله الله ال		
	· · · · · · · · · · · · · · · · · · ·		
Birgermen Egraffenten aber inner	A.C.	0	2273 M F
	, 06	IJ	•
			-
Compiled by: P. Budininkes Date:	August 1975	·	Date:

## MINERAL SPIRITS

SIGNAL WORD

CAUTION

COMMON SYNCHYMS AND TRADE NAMES

Petroleum spirits Naptha Safety Scivent Stodoard Scivent White Spirit DESCRIPTION

Watery, colorless liquid Gasoline-like ador Floats on water CHEMICAL FORMULA

Mixture of hydrocarbons

**MOLECULAR WEIGHT** 

### 2. PHYSICAL PROPERTIES

Freezing Point: Below -50°F (-45°C)

Bodling Point: 310°-36°F (-45°C)

Boiling Point: 310°-395°F (214-202°C)

Density (Spec. Gravity) at  $65^{\circ}$ F (20°C): 6.5 15s/gal (0.78)

Kinematic Viscosity, at 77°F (25°C): SSU 41 (5.6 cSt)

at "F / "E): SSU ( cSt

Specific Heat, Btu/lb. T (cal/g C): 0.48

Coefficient of Thermal Expansion: per  $^{\rm C}{\rm F}$ 

per C

Vapor Pressure: 1.5 ps1a (77.8 mm Hg) € °F ( °C)

2.5 psia (129 mm Hg) ₽ ~T ( ~C)

11.6 psia (569 mm Hg) # F ( 50)

et 66°F (20°C) 0.05 psia (2.6 mm hg)

Sclubility in Water, 2: Insoluble

Solubility of Water in Commodity, 2: Inscluble

### 3. HAZARD DATA

Flashpoint: 105-14('F (40-60'C) CC

Flammability Limits in Air. Volume 1: 0.8 - 610

Autoignition Temperature: 540 °F (282 °C)
Threshold Limit Value (TEV), ppm: 200

Short-Terr Inheletion Limits:

Dour Inteshald, por:

NFPA Hazard Classification

Flammability
etion
2
Fealth D Reactivity

### 4. HAZARD ACTION

FIRE

| Contustable | | Parthally filled cortainers may evolube in fire. | | Extraculation throws now, and obsascal, or carbon divolme.

Total exposed containers when waters

		HARM	ACTIO+
-		ritation of eyest mose, and threat if present in high torsentration; a continuous medical structure in longs will cause mapidly developing buinkhar, noema.	Move to treat err. If Present gets into lungs, jet ettertfor immediately.
EXPOSURE	SWALLOWED	; marmital if swallower. ; will cause nausea, vomiting, cranque perfects for of central nervous system up to come and ever peatro elso prosible violes and liver canage. Arout one will cause geatr.	DG NOT INDUCE VOMETING. Sive mile or water. Set medica, attergion.
	ON SKIN	Slipetly irritating or long exposure.	Pemove contaminated clothing. While off and wash affected areas with that and wash affected areas with that
	in Eyes	irritation of eyes.	Flush water for 15 minutes. Get medical attention.

TECTIVE MEASURES IN HANDLING

idequate ventilation.

moid prolonged breathing of vapor.

Avoid prolonged contact with skin.

Keep containers closed and away from heat, sparks and open flame.

Wear goggles or face shield and impervious gloves. Air-line or self-contained respirator should be used if entry is made into an unventilated tank or an enclosed area

containing large spill.

### 6. SPILL AND/OR EMERGENCY PROCEDURES

Secure all ignition sources.

Shut-off all lines involved in the emergency that are readily accessible.

Notify plant operations officer.

Notify-U.S. Coast Guard and local health and pollution control agencies, if required.

## 7. SPILL TREATMENT REQUIREMENTS

Pump off spilled material to containment at separator.

Absorb residual by Vermiculite or other solid absorber, transfer into closed containers and transport for final disposal.

#### B. COMPATIBILITY WITH MATERIALS

-a.- Compatibility with: \_\_\_\_\_ \_\_\_\_b. Preferred Materials for:

compatible Steel Tanks steel

Aluminum compatible steel

Pipes compatible .. Brass

all-iron, centrifugal or **Pumps** bronz, fitted

compatible Stainless Steel Polyetry lene crosslinked; Viton Hoses

Buna-N

Compatibility Chart No. JM-60 Gaskets -Compatible with all construction materials.

### 9. STORAGE CONSIDERATIONS

Venting: Std. pressure-vacuum vent mandatory on fixed roof tanks.

### 10. LABELING REQUIREMENTS

None required.

### 11. CLEANING PROCEDURES

Drain tank, wash with a detergent solution or steam, remove condensate and any dry.

CP-7 or CP-9.

marine to the second \* \*. <del>\*</del> . . .

(Details of the cleaning procedure are given in Appendix)  $\mathbb{R}^2$ 

## 12. MISCELLANEOUS

Mineral spirits is a mixture of paraffins and naphthenes in various proportions. Data presented are essentially for Shell mineral spirits. Those manufactured by others may have lower flashpoint and higher vapor pressures. Sneck with manufacturer.

P. Budininkas Compiled by:

Date: April 1976 Revised: Date:

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E 1. COHM	צהנכ	······································				SIGN' L WORD	
3			MOLASSES				
						ATTENTION	
			•		<del>.</del>		
	p molesses	ND TRADE NAMES	DESCRIPTION Viscous, syrupy liquid Mixes with water		CHEMICAL FOR	RATULA	
High-test Discard #	molasses polasses				MOLECULAR W	/EIGHT	
2 PHYSK	CAL PROPERTIE	:S					
Freezing	Point: Variable	e, lower than 32°F (D	°C) Vapor Pi	ressure: 1.5.p	sia (77.8 cm Hg)	e ( ( %)	
Boiling P	oint: Variable	e, approximately 215°			psia (129 mm. Hg)	_	
Density (	Spec. Gravity)	at 68°F (20°C): 11.3	7-12.0 lbs/gal (1.4-1.45)	11.0	psia (509 mm Hg)	€ '- ( <sup>L</sup> C)	
Kinematic	Viscosity, at	77°F (25°C): SSU	( cSt)	at 68	<sup>c</sup> F (20 <sup>c</sup> C) p	sia ( mm·Hg)	
I	at .	86°F (30°C): SSU	14,000-900,000 (9500-200,000 cSt)	ity in Water.	2: In all proper	Lions	
1 '	ieez, Bw/lb. F	(CA)/g ~L):			•	ln all ∴ropurtions	
Coefficien	nt of Thermal E	xpansion: per <sup>c</sup> f	30100111	ity of Pater 1	n commonty, a:	in all oroportions	
		per <sup>c</sup> C	•			•	
3 HAZAR	D DATA			NFPA	^	Flamma ifity	
Flashpoir	L: hone			Hezero			
T .	Flammebility Limits in Air, Volume 2: None (Estimated)					$\lambda$ .	
Ţ	ion Temperature			health 1 0 , Reactivity			
Tn-eshold	Limit Velue (T	LV), ppm: kone	•			\ /	
Short-Terr	Inhalation Li	mils:			Χ.	Y	
Gor Thres	enold, ppm:				$\sim$		
4. HAZARI	ACTION				<del></del>		
	horiflammable.			<del></del>			
FIRE			•				
	•	1	HARM		ACTION		
	INHALED	he harm in open systems, a In closed systems, a cause headache, dizz ness.	tems. carbon dioxide build at may riness, loss of conscious-	ilf breathing	is difficult, c	ittici.] resilve	
EXPOSURE	SWALLOWED	Notie			- - - -		
	ON SKIN	hone			<u> </u>		
	in Eyes	May irritate eyes.	072	Wash eyes wit	th water.		

There adequate ventilation.  Wear popples or face shiled.  Air-line or self-contained respirator should be used	d 1f entry is made into an unventilated tank.
المرو المجارة	
8. SPILL AND/OR EMERGENCY PROCEDURES	to the second se
Notify U.S. Coast Guard and local health and polluti	
1. SPILL TREATMENT REQUIREMENTS	
Pump off spilled material to containment. Flush residual with water.	
Pump off spilled material to containment. Flush residuel with water.  8. COMPATIBLE Y WITH MATERIALS	
Pump off spilled material to containment. Flush residual with water.	

Because of their high viscosity heat coiled tanks and heat traced pipes and pumps will be required. Both reciprocating

and rotary pumps are used in service with some preheating to improve flow characteristics. However, overheating should be avoided because it will cause caramelization of sugar present in molesses. Even at normal temperatures molesses undergo slow degradation in storage accompanied by the evolution of carbon dioxide and frothing. Beet molesses have a pH range of 7.5-E.6; however, cane molesses have pH of 5.5-E 5 and may cause some corrosion. Obtain data from customare rencerning viscosity, physical properties for the particular type handled.

Brain tank, flush with water, air dry.

(Details of the cleaning proced reare given in Appendix)

However, they decompose during storage producing carbon dioxide that may accummulate in high concentrations in

Polyethylene crosslinked; Butyl;

Retural rubber

# 25 KV

Date:

JM-60

Geskets -

efditscnoo

Venting: Std. pressure-vacuum vents way be used on fixed roof tanks.

Milasses are very viscous masses containing 75-B5% solids, are edible, and non-toxic.

Date: October 1976 Revised by:

closed containers and may harm persons entering unventillated tanks .--

Steinless Steel -

S. STORAGE CONSIDERATIONS

Compatibility Chart No.

10. LABELING REQUIREMENTS ....

CP-4

None required. . .

12. MISCELLANEOUS

Compiled by: P. Budininkas

HANDLING AND SAFETY INFORMATION ON COMMODITIES 1. COMMODITY SIGNAL WORD KEROSENE CAUTION CHEMICAL FORMULA COMMON SYNONYMS AND TRADE NAMES DESCRIPTION Colorless liquid Mixture of hydrocarbons Fuel oil No. 3 Fuel bil .odor Floats on water Range of 1 **MOLECULAR WEIGHT** Illuminating oil fig qmai Mixture Jet fuel: JP-1 2. PHYSICAL PROPERTIES 图1866年7800至7月88876月至57日,1957 Freezing Point: -50 °F (-46°C) Vapor Pressure: 1.5 psia (77.8 mm Hg) ₱115 °F ( 46 ℃) Density [Spec. Gravity] at 68°F (20°C): 6.7-7.1 lb/gal (0.8-0.85) 11.0 psia (569 mm Hg) @ Kinematic Viscosity, at 77°F (25°C): SSU 30 (1.25cSt) at \$8°F (20°C) D.04 psia (2 mm Hg) at 32 of (0 oc): SSU 34 (2.5 rSt) Solubility in Water, X: Insoluble Specific Heat, Btu/lb. 7 [cal/g C): 0.47 Solubility of Water in Commodity, at Insoluble Coefficient of Thermal Expansion: per of 0.000714 per °C 0.00128 3. HAZARD DATA Flammability NFPA Flashpoint: 100 -165°F (38 -74°C) Hezard Classification Flammability Limits in Rir, Volume 1: 0.7 - 6.0 Autoignition Temperature: 444 of ( 229 C) Health ( Reactivit Threshold Limit Value (JLV), ppm: 200\_1/-Short-Term Inhalation Limits: Not available . Odor Threshold, ppm: 1 4. HAZARD ACTION the Confidence of the continue of Combustible. and their and an area. Extinguish with foam, dry chemical, or carbon diuxide. Direct water stream may be ineffective. FIRE Ippl exposed containers with water :: ACTION HARM Irritation of mese, headache, mauses, Move to fresh air. weakness, confusion, coma. 1103ID IN LUNGS causes capidly developing If exposed to high concentrations MHALED attention. -- 1300ID AN-LUNG- N-c----pulmonary edema. medical attention appromptly. The property -Harmful IT swallowed. DE NOT INDUCE VOMITING. Local irritation, burning of mouth, vomiting; Sive milk/or water. SWALLOWED also as inhaled. Set medical attention. L pint may cause death. EXPOSURE Irritating to skin. Kipe off and wash affected areas with succ May be absorbed through skin. and water. and the state of t ON SKIN Remove contaminated clothing and wash before

074

Wash with water for 15 minutes.

Get medical attention.

Irritating to eyes.

IN EYES

Can cause corneal burns.

5. PROTECTIVE MEASURES IN HANDLING S.2. Have adequate ventilation.  Avoid prolonged breathing of vapor.  Avoid prolonged contact with skin.	DAD BIS FACED A
* ** ** ** ** ** ** ** ** ** ** ** ** *	
Wear goggles or face shield and impervious gloves.  Air-line or self-contained respirator should be used if entry is m containing large spill.	made into an unventilated tank or an enclosed area
	<u> </u>
6. SPILE AND/OR EMERGENCY PROCEDURES  Shut-off all lines involved in the emergency that are readily acce	essible.
Notify plant operations officerNotify U.S. Coast Guard and local health and pollution control age	encies, if required.
********	
7. SPILL TREATMENT REQUIREMENTS	The state of the s
Pump off spilled material to confinement at separator.	· ·
Absorb Tesidual by Vermiculite or other solid absorber, load into	
<ul> <li>できた。このは数数を施設しません。</li> <li>ものは、なりは、数をある数がある。</li> </ul>	• •
in the second of	••**
The fact of the fa	<u> </u>
B. COMPATIBILITY WITH MATERIALS	MMCC of the months of the first of
-a. Compatibility with:	b. Preferred Materials for:
Steel - Compatible	Tanks - steel
Aluminum - Compatible	Pipes - steel
Brass + Compatible	Pumps - all-iron, centrifugal or bronze
Stainless Steel - Compatible	fitted Hoses - Polyethylene prosslinked; Buna h
Compatibility Chart No. 9	Baskets - JM-5D
Compatible with the usual construction waterials.	
9 STORAGE CONSIDERATIONS	orași, a la la de
Venting: Std. pressure-vacuum vent may be used on fixed roof tanks. New Jersey Chapt. IF establishes choice of return bend or P-V went b over -D2 psia # 70°F.	Return bends normally acceptable. State of based on tank size for vapur pressure material:
10. LABELING REQUIREMENTS	
None required.	(4) (4) (4) (4) (4) (4) (4) (4) (4) (4)
11. CLEANING PROCEDURES AND THE HEAD	en in de krieser en de partir la julije en de
Drain tank, wash with a deter	rgent solution and air dry.
CP-7	and the state of t
Details of the cleaning procedure are	of the formation
	e Sizen in appendix)
12. MISCELLANEOUS	
Kerosene 1% a static generator.  It is sensitive to contamination with higher boiling components whi [absense of smoke) in pot or wick type burners. Aromatic content i	ch change its critical burning characteristics is particularly important, and the aniline point
establishes a measure of this characteristic.	075
Compiled by: P. Budininkas Tate: April 1976 Davised by	Date

1. COMMODITY SIGNAL WORD 40 4 1 1 1 JP-4 30 CAUTION -DESCRIPTION CHEMICAL FORMULA COMMON SYNONYMS AND TRADE NAMES Mixture of hydrocarbons Colorless liquid. Jet Fuel. Grade JP-4 Laterate bei be Floats on water. Fuel oil odor. ... **MOLECULAR WEIGHT** Mixture of hydrocarbons A TANK GROWN THOUGH ASSISTED IN 2. PHYSICAL PROPERTIES Freezing Point: below -76°F (-60°C) Vapor Pressure: 1.5. psia (77.8 mm Hg) @ 68 PF [ 18 PC) Januarist Miss allen Boiling Point: 349-549 F (175-287 C) 2.5 psia (129 mm Hg) 中 95. 许 (.35 元) at of : oc): SSU 4 .: eSt) [\*\* Solubility in Water, X: Insoluble Specific Heat, Btu/16. 7 (cal/g C): D.48 Solubility of Water in Commodity, 2: Insoluble .... Coefficient of Thermal Expansion: per F 0.000734 . per ℃ 0.0013 ---3. HAZARD DATA NFPA Flammability **Tiezand** Flashpoint: -14°F to 30°F (-26°C to 1°C) CC Classification Flammability Limits in Air, Volume 2: 1.3 - 8.0 Autoignition Temperature: 464 % (240 %) Health Reactivi Threshold Limit Value (TLV), pom: 200 Short-Term Inhelation Limits: The Professional Door Threshold, ppm: 4. HAZARD ACTION Extremely Flammable. May be ignized by test, sparks, or open flame. May explode if ignized in an enclosed area. Vapor is heavier than air and flashback along vapor trail may occur. FIRE Partially filled containers may explode in fire. Extinguish with form, any chemicals, or carbon dioxide. Loo? exposed containers with water. ACTION HARM . Irritating to eyes, nose and throat.
Exporures to low concentrations or for short time has little effect. High concentrations will cause dizziness, headache, anesthesia, come, and respiratory arrest.
Linua in lungs will cause pulmonary edema... Move to frest air. If breathing is difficult, pire or If breathing has stopped, commisses artificial respirations artificial respirations are larger at larger and artificial attention and attention and attention are larger at larger at larger and larger attention are larger at la INHALED DO NOT THOUCE ADMITTING Harriul if swallowed. Have victim drink milk or water. Irritation of mouth, esophagus and stomach; SWALLOWED vomiting, diarrhea; symptoms as inhaled. If appreciable quantity swallower, get reduce? Between one nunce and a pint may cause death. atlentics and stomach lavage. EXPOSURE Irritating to skin on long exposure. Remove contaminated clothing. Wash affected areas with scap and water. ON SKIN : A TOTAL STORY OF THE BUILDING BUILDING Irr tating to eyes. Flush eyes with water for 15 minutes. Get medical attention. IN EYES

5. PROTECTIVE MEASURES IN HANDLING S.	
Avoid prolonged breathing of waper.  Avoid prolonged contact with slim.	
keep containers closed and away from heat, sparks and op Wear goggles or face shield and impervious gloves.  Air-line or melf-contained respirator should be used if a	en flame.  Entry is made into an unventilated tank or an enclosed area
containing large spill.	
6. SPILL AND/OR EMERGENCY PROCEDURES	
Secure all ignition sources.  Shut-off all lines involved in the emergency that are renoutly plant operations officer.  Use water foo mazzles to hold down vapor.  Notify U.S. Loast Guard and local health and pollution of	(#1776.4) (#176.4) <b>4.30</b> (7)
7. SPILL TREATMENT REQUIREMENTS	ESTREAL STORES
The state of the s	
Apply foam or fine water. Spray to minimize wapor formatis  Fump away spilled material to confinement at separator.	
Residual will e apprate in a few hours; however, adequate ignizion of the vapor.	e precautions should be taken to prevent possible
B. COMPATIBILITY WITH MATERIALS	The second secon
a. Compatibli ity with:	b. Preferred Katerials for:
Steel - Compatible	Tools Plant and the second of
Aluminum - Compatible	Pipes - steel
	Pumps - all-iron or bronze fitted
Brass	
Stainless Steel - Compatible	Hoses - Polyethylene crosslinked. Vitor Buna-N
Enmpetibility Charl No. 9  Ratural rubber hoses are ettacked and unsuitable.	Saskets - JM-SD
Machine 1 (2006) 110363 212 of Calchel and ansar 100016.	
9. STORAGE CC NSIDERATIONS	and with the control of the second of the control o
	loating roof or open top tanks will be required in most state
	and the second section of the second second section is the second second second section of the second secon
	er mer er frank i de verske fan de versk De verske fan de verske fa
10. LABELING FEQUIREMENTS	
Flammable liquid.	
The second of th	Habitation in the second of th
11. CLEANING FROCEDURES	الله الله الله الله الله الله الله الله
Drain lank, gas dr.	y mechanically then wash with a detergent solution and
1 CP-2 followed by CP-7	The Control of the Co
· Carrier of the control of the con	and the state of the
(Details of the cleaning pr	occupie are given an appendix)
The second secon	on naves in the contract of th
JP-4 is static generator; therefore, spark-proof and stati	ic-proof equipment should be employed.
	The second secon
	077
Compiled by: Budininkas Date: April 1976 Revis	sed by:

and the Hampshapping approximation

1 COPMODITY SIGNAL WORD FUEL OIL NO.6 CAUTION CHEMICAL FORMULA DESCRIPTION COMMON SYNONYMS AND TRADE NAMES Thick, black liquid Mixture of Hydrocarbons Bunker C bil Residual fuel bil Tar udor Usually floats on water. No. E . **MOLECULAR WEIGHT** 2. PHYSICAL PROPERTIES Freezing Point: 25-55°F (-4-13°C) Vapor Pressure: 1.5 psia (77.8 mm Hg) € C, Builing Point: 415-3102°F (212-593 C) 7 2.5 psia (129 mm Hg) @ ٠c; LF : Figure 1.5 (Spec. Gravity) at  $68^{\circ}$ F (20°C): 7.5 - 8.5 (bs/gal (0.9 - 0.97) 11.0 psia (569 mm Hg) @ ز يَ \* kinematic Viscosity, at 77°F (25°C) SSU ~3011 (~650 cSt) at 68°F (20°C)hegl. psia (hegist eg) at 175 F ( C SSU 155 ( 33 cSt) Solubility in Water, 1: Insoluble Specific Heat, Btu/lb. 7 (cal/g C): 0.47 Solubility of Water in Commodity, &: Insoluble Coefficient of Thermal Expansion: per F 3. HAZARD DATA Flammability NEPA Fleshpoint: 150°F (>66°C) CC : 3 0°F (160°C) DC Hazard ż **Elassification** Flammability Limits in Air, Volume : 1 - 5 Autoignition Temperature: 765 of ( -07oc) C Health ( Reactivity Investold Limit Value (TLV), ppm: Short-Term Inhalation Limits: Door Threshold, ppm: 4. HAZARD ACTION Compustible. Extragulate with dry chemical, foam, or carbon dioxide. FIRE HARM suppropries to low, even which heated, the cause significant harm. INHALED Do NOT income vomiting. Harmful if swallowed. have villim drink mile or witer. SWALLOWED Causes par rointestinal irritation. About one mint may cause death. **EXPOSURE** Remove contaminated alething. Wipe off and wash affected areas with I'm Slightly immitating on long exposure. ON SKIN and water. Flush eyes with water for 15 minutes. Irritating to eyes. IN EYES 078 Get medical attention.

FUEL OIL NO.6		•	• •			
S. PROTECTIVE MEASURES Avoid prolonged contact whear goggles or face ship	ith skin.	·		the the selection	- فالاستخدادة	**************************************
·				~ <b>.</b>	•	•
•	•					
					=	
6. SPILL AND/OR EMERGEN	ICY PROCEDURES					
Shut-off all lines involv Notify plant operations o Notify U.S. Coast Guard a	fficer.			. •	iam den et et I.	
•			·			•
en e	- <u> </u>					
7. SPILL TREATMENT REOL	PREMENTS				TO CAUSE	eli digerije e
If possible, pump off to different to visco Spread Vermiculite, sand different to visco Spread Vermiculity (visco Spread Vermiculity)	us for pumping o	n cooling, re	emove mechanic i transport fa	ally. or final disposit	ion.	
	: :		1-8-53 to 1	7 71 22		
		15.	देशनाम है।	#11 *** . 121 ***	_	
B. COMPATIBILITY WITH MA	TERIALS	-		• .	n znunun erweit	·
a. Compatibility with:	· <u>·</u>			b. Preferred Ma	terials for:	
Steel -	compatible			Tanks -	steel	
Aluminum +	.compatible	•		Fipes -	steel	
Brass	compatible	·	•	Pumps -	P.D. all-iron centrifugals >	
Stainless Steel	compatible		•	Hoses -	neoprene, wire	
Compatibility Chart +			-	Geskets -	asbestos	•
Compatible with the L	sual construction	materials.				•
STORAGE CONSIDERATIC Venting: Std. pressure-vac Belause of its high solid temperatures above 115°F. heating coils and insulation land trucks may require to	oum went may be unfication point and h	d high visco eat tracing:	sity, fuel of of pipes and p	l No. E is usual pumps will be re	ly stored and pum quired.	
detailed to provide load					THE PERSON NAMED IN CO.	
10 LABELING REQUIREMENT	\$		2317			1
None required.		• • • • • • • • • • • • • • • • • • •				-
II. CLEANING PADCEDURES	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1					<del></del>
CD-0 -	Drain	tank, steam.	remove conde	sate and air dr		
CF-3			1. 1.			
· · · · · · · · · · · · · · · · · · ·	_ {Details of 1	ne cleaning p	rocedure are	given in Appendi	0	

### 12. MISCELLANEOUS

Since fuel oil No. 5 is stored and transported at temperatures above 130°F, exposure to hot vapors and tot liquid may cause serious heat burns and blisters. Since minimum specifications call for flash point of 150°F explosive vapors will exist generally at 150°F, or over in the vapor space.

79

Compiled by: P. Budininka: Date: April 1976 Revised by:

Date:

HANDLING AND SAFETY INFORMATION ON COMMODITIES

1. COMMODITY

# FUEL OIL NO. 5

SIGNAL WORD

CAUTION

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COMMON SYNONYMS AND TRADE NAMES

kesidual fuel oil No. 5

DESCRIPTION

(

Uily, dark liquid Strong oil odor Usually floats on water CHEMICAL FORMULA

Mixture

**MOLECULAR WEIGHT** 

Mixture

### 2. PHYSICAL PROPERTIES

freezing Point:

D 'F ( -18'C)

Bailing Point: 426-1062°F (218-570°C)

liensity (Spec. Gravity) at 68°F (20°C): 7.5 lbs/gal (0.90)

kinematic Viscosity, at 77°F (25°C): SSU

at 100°F

Specific Heat, Etu/lt. T (cal/g T): 0.47

Loefficient of Inermal Expansion: per "F

Vapor Pressure: 1.5 ptia (77.8 mm Hg) #

2.5 psia (129 mm Hg) m

Ŧ ( 11.0 psia (569 mm Hg) @ 1) at 68°F (20°C) 0.04 psia ! 2 m -;

(36°C): SSU 137-269 (29-58 cSt) Solubility in Water, 1: Insoluble

Solubility of Water in Commodity, 1: Insuluple

### 3. HAZARD DATA

Fleshpoint: >130 9F (>54 9C) CC

Flammacility Limits in Air, Volume 1:

Autoignition Temperature: (30

Investible Limit Value (TLV), ppm:

Short-Term Inhalation Limits:

Spor Threshold, ppm:

NEPA Hazard Classification

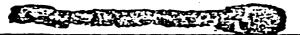
Flammatility Reactivit

### 4. HAZARD ACTION

FIRE

Extinguish with dry chemical, foam, or carbon disside.

		HARM	AC" .
•	INHALED	Labor pressure too low, even when headed, is cause significant harm.	tuve to tree with
EXPOSURE	SWALLOWED	harmful if swallowed. Causes castrointestinal irritation. About one pint may cause death.	Do NOT induce vortice.  have victim ognowed the or water
	DN SKIN	Slightly irritating on long exposure.	Remove contaminated cluthing. Wise off and wash affected areas with so a and water.
	IN EYES	Irritating to eyes. 080	Flush eyes with water for Hillington.  Get medical attention.



5	PROTECTIVE	MEASURES	BN HANDI BIO	2.7	į
₽.	PAULECTIVE	MERSURES	M DANULMI	3 3-4	Z

Avoid prolonged contact with skin. wear poggles or face shield and impervious gloves.

### 6. SPILL AND/OR EMERGENCY PROCEDURES

Shut-off all lines involved in the emergency that are readily accessible. Notify plant operations officer. Notify U.S. Coast Guard and local health and pollution control agencies, if required.

### 7. SPILL TREATMENT REQUIREMENTS

If possible, pump off to containment at separator.
If spill becomes too viscous for pumping on cooling, remove mechanically.
Spread Vermiculite, sand or dirt to absorb residual and transport for final disposition.

### 8. COMPATIBILITY WITH MATERIALS

a. Tompatibility with: -- ----

Steel - compatible

Aluminum - compatible

Brass - compatible

Stainless Steel - compatible

Compatibility Chart No. 9

Compatible with the usual construction materials.

b. Preferred Materials for:

Tanks - stee

Pipes - steel

Pumps - all-iron or bronze fitted

Hoses - Buna-N: Viton, wire reinforced

Baskets - JY-60

### 9. STORAGE CONSIDERATIONS .

Venting: Std. pressure-vacuum vent may be used on fixed roof tanks. Return bends normally acceptable. Because of its highsolidification point and high viscosity, fuel oil No. 5 is usually stored and pumped at temperatures above 80°f. Heating coils and insulation on tanks and heat tracing of pipes and pumps may be required.

### 10. LABELING REQUIREMENTS

None required.

### 11. CLEANING PROCEDURES

Drain tank, wash with a detergent solution and air dry.

5.00

CP-7

(Details of the cleaning procedure are given in Appendix)

### 12. MISCELLANEOUS

Since fuel oil No. 5 may be stored and transported at temperatures above 80°F, exposure to hot vapors and hot liquid; can cause heat burns and blisters.

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Compiled by: P. Budininkas Date: Aug

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Date: August 1576 Revised by:

Date

F1 sh eyes with water for 15 minutes. Gc medical attention.

	HANDLING AND SAFETY INFORMATION ON COMPODITIES				
1. COMM	YNCO	<del> </del>			SIGNAL WORD
		FU	JEL OIL N	O. 4	CAUTION
		ND TRADE NAMES	DESCRIPTION		L FORMULA
Pesidual	fuel oil No. 4		Oily, dark liquid Characteristic fuel oi Floats on water	1 odor	LAR WEIGHT
				ì	iture
Boiling Po Density (S Kinematic Specific H	oint: 214-1090° Spec. Gravity) Viscosity, at et: ieat, Btu/lb. F	at 68 <sup>2</sup> F (20 <sup>c</sup> C): 7.5 77 <sup>e</sup> F (25 <sup>c</sup> C): SSU 100 <sup>c</sup> F (38 <sup>c</sup> C): SSU	lbs/gal ( 0.90 ) ( cSt) 70-94 (13-19 cSt) Solubi	Pressure: 1.5 psia (77.8 m 2.5 psia (129 m 11.0 psia (569 m at 68°F (20°C)0. Hity in Water, m: Insolution of the commodity	r Hg) & <sup>C</sup> r ( r Hg) & <sup>C</sup> f ( O4 psia (2 mm ng b <sup>*</sup> e
Flammabili Autoigniti Threshold Short-Term	=	ir, Volume 1: 1-5 : 505 °F (763 °C) LV), ppr:		NF A Heland Classification Health	Flammability  2  0  Feacti
4. HAZARI	ACTION				
FIRE	Combustible. Extinguish wi	th dry chemical, foam	n, or carbon disside.		
		1	HARM		· · · · · · · · · · · · · · · · · · ·
-	INHALED	labor pressure toul lause significant ha	Dw. even when heated, to	Mo e to frespeir.	
XPOSURE	SWALLOWED	Marmful of swallowed Clauses castronnesti Atout one pint may o	onal irritation.	Do NOT induce vomiting. Ha e victim drink:mili :	or water.
	OH SKIN	Slichtly irritating	on long exposure.	Re ove contaminated clo by e off and wash affect ar. water.	

082

IN EYES

Irritating to eyes.

5. PROTECTIVE MEASURES IN HANDLING S-2 TELENTIN, THE Avoid prolonged contact with skin.	Cars tang tangan.	A CONTRACTOR OF THE PROPERTY O	
Wear goggles or face shield and impervious gloves.		•.	
	<del>-</del>	<del>-</del> ·	•
		£	
6. SPILL AND/OR EMERGENCY PROCEDURES			
Shut-off all lines involved in the emergency that are readily access Notify plant operations officer. Notify U.S. Coast Guard and local health and pollution control agenc		tin i green dateur. Historia	·
THOUSE FLECTORES			
7. SPILL TREATMENT REQUIREMENTS			
If possible, pump off to containment at separator. If spill becomes too viscous for pumping on cooling, remove mechanic Spread Vermiculite, sand or dirt to absorb residual and transport for the spill of the spill	I TIME! WISPUSIE!	on.	
in what the plan parament for the first of the contract	40 2/2 100	*. *. *	
B. COMPATIBILITY WITH MATERIALS 5-12 (2-16-12)		-	
a. Compatibility with:	b. Preferred Mat	erials for:	
Steel _ compatible	Tanks -	steel 700	· <del>-</del>
Aluminum _ compatible	Pipes -	stee)	6
Brass _ compatible	Pumps -	all-iron or bronze fitt	ted (*)
Stainless Steel - compatible	Hoses —	Buna-N; Yiton; wire vei	
Compatibility Chart No. 9  Compatible with the usual construction materials.	Gaskets -		
The state of the s			
S. STORAGE CONSIDERATIONS	19179		•
Venting: Std. pressure-vacuum vent way be used on fixed rouf lanks.	Heturn vents nom	mally acceptable.	
			•
10. LABELING REQUIREMENTS	<u> </u>		
	·	en e	• ;
None required.	A CONTRACTOR OF THE STATE OF TH		- ETI
11. CLEANING PROCEDURES			
Drain tank, wash with a dete	ergent solution a	nd air dry.	7
CP-7  [Details of the cleaning procedure are	given in Appendix	er Translatering Translatering	
12. MISCELLANEOUS		*	
When hot material is pumped, exposure to hot vapors and hot liquid ma	ay cause heat burn	is and blisters.	€
O83		<u> </u>	
Compiled by: P. Budininkas Date: August 1976 Revised by-		Date:	

SIGNAL WORD

CAUTION

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Flammability

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Flush with water for 15 minutes.

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Reactions

HANDLING AND SAFETY INFORMATION ON COMMODITIES 1 COUNDO'TY FUEL OIL NO.2 COMMON S' NONYMS AND TRADE NAMES DESCRIPTION CHEMICAL FORMULA Dily, yellow-brown liquid. home heating oil Mixture of hydrocarbons Characteristic fuel oil odor. Domestic heating oil floats on water. MOLECULAR WEIGHT 2. PHYSICAL PROPERTIES Freezing Poi: t: -20 °F (-29 °C) Vapor Pressure: 1.5 psia (77.6 mm Hg) € Boiling Point: 540-640°F (282-338°C) 2.5 psia (129 mm Hg) @ Density (Spe . Gravity) at 68°F (20°C): 7.3-7.5 lbs/gal (0.87-0.90) 11.0 psia (569 mm Hg) & Annematic Vi cosity, at 77°F (25°C): SSU 33 ( 2 cSt) at 68°F (20°C) 0.04 psia ( 2 mm Ho) at 68f (20°C): SSU 46 ( 6 cSt) Solubility in Water, 2: Insoluble Specific Heat, Btu/lb. F (cal/g C): 0.47 Solubility of Water in Commodity, 2: Insoluble Coefficient of Thermal Expansion: per CF per <sup>c</sup>C 3. HAZARD I ATA NEPA Hezard Flashpoint: 136 9 (58 °C) CC Classification Flammability Limits in Air, Volume 2: 0.6 - 6.5 ſ, Autoignition Temperature: 494 °F (256 °C) Health o Inreshold Limit Value (TLV), ppm: Short-Term Inhalation Limits: Oppr Thresho d. ppm: 4. HAZARD / CTION Compustible. -artially filled containers may explode in fire. extinguish fire with dry chemical, foam or carbon dioxide. FIRE lool exposed containers with water. HARM ACT labor slightly irritating to mose, tremet and li breathing is siffic ... INHALED will cause headache and giddiness. If liquid expirates into ... liquid in lungs will cause rapidly developing attention immediately. bulmonary edena. DO NOT INDICE VOMITING. narmful if swallowed. Causes nausea, vomiting, cramps, depression of Have victim orin, water on my ! WALLOWED If appreciable quantity swell and central nervous system, to come and death. Possible delayed kidney and liver damage. About one pint will cause death. Attention and Stomach lavale. EXPOSURE Slightly irritating on prolonged contact. Remove contaminates clothing. Remove by wiping and wash affected area ON SKIN spap and water.

Irritating to eyes.

IN EYES

5. PROTECTIVE MEASURES IN HANDLING 5-2. Have adequate wentilation. Avoid prolonged breathing of vapor. Avoid prolonged contact -1th Skin.	e betre jang sakaganan	The state of the s
Keep containers closed and away from heat, sparks Wear occoles or face shield and impervious gloves Air-line or self-contained respirator should be u		ilated tank or an enclosed area
containing large spill.	• •	
6. SPILL AND/OR EMERGENCY PROCEDURES		and the contract of the contra
Shut-off all lines involved in the emergency that		en entre fix of the man appropriate
hotify plant operations officer. Notify U.S. Coast Guard and local health and poll	•	
		•
		<u> </u>
7. SPILL TREATMENT REQUIREMENTS		Termora Large de la
Pump off spilled material to containment at separa Absorb residual by Vermiculite or other solid absorb		off
ADSOLD TESTINGS DY VERMICUTTE DE OCHET SOLID BOS	or der die granspore for the drape.	terren et alen et a
		The state of the s
,	and the second seco	
B. COMPATIBILITY WITH MATERIALS		Control (American Page American Constitution of Constitution o
a. Compatibility with:	b. Preferred Mat	terials for:
Steel - compatible ··	Tanks -	steel and analysis
Aluminum – compatible	Pipes -	Steel
Brass - compatible	Pumps	all-iron or bronze fitted
Stainless Steel - compatible	Hoses -	Polyethylene crosslinked; Buna-N; Viton
Compatibility Chart No. 9	5 Baskets	JM-60
Compatible with the usual construction materi	als.	<u> </u>
9. STORAGE CONSIDERATIONS	-	
Venting: Std. pressure-vacuum vents may be used on State of New Jersey Chapt. 16 establishes choice of materials over .D2 psia # 70°f.	fixed roof tanks; however standard freturn bend or P-V went based on	return bends acceptable. tank size for vapor pressure
10. LABELING REQUIREMENTS		
None required.	Carr.	
None Tequities.	The state of the state of	
11. CLEANING PROCEDURES		
CP-7	wash with a detergent solution and	elridry
	المراجعة المستقدار المستورات المستورة المستورة المستورة المستورة المستورة المستورة المستورة المستورة المستورة المراجعة المستورة ال	A CONTRACTOR OF THE PARTY OF TH
(Details of the clean	ing procedure are given in Appendix	i i recis
12. MISCELLANEOUS		
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Compiled by: P. Budininkas Date: April 1976 Revised by:

Date:

1. COMMODITY

# ETHYLENE GLYCOL

SIGNAL WORD

ATTENTION

### COMMON SYNONYMS AND TRADE NAMES

1.2 Ethanediol Blycol Alcohol Ethylene Alcohol Glycol Monoethylene Glycol ....

### DESCRIPTION

Colorless, syrupy liquid Hygroscopic Sinks and mixes with water Combust1ble Ddorless, sweetish taste

CHEMICIL FORMULA CHOOH CHOOH

MOLECULAR WEIGHT

### 2. PHYSICAL PROPERTIES

Freezing Point: 10°F (-12°C)

Boiling Point: 387°F (197°C)

Density (Spec. Gravity) at 68°F (20°C): 9.3 lbs/gal (1.12)

Kinematic Viscosity, at 77°F (25°C): SSU 77 (15cSt)

at 20 of 45 oc): SSU -460 (-100cSt)

Specific Heat: 0.57 Btu/16 F (0.57 ca)/g. OC)

Coefficient of Thermal Expansion: 0.000360 per of

0.000648 per EC

Wapor Pressure: 1:5 psia (77.8 mm Hg) # 147 Pf (64 °C)

2.5 psia (129 mm Hg) # . \*F ( \*C)

11.0 psia (569 am Hg) @

at 68°F (20°C) Neg.osia (.D5 mm Hn)

Solubility in Mater. 3: Soluble in all proportions

Solubility of Water in Commodity, 2: soluble in all

### 3. HAZARD DATA

Flashpoint: 240°F (116°C). CC

Flammability Limits in Air, Volume X: 3.2 - UEL not avail.

Autoignition Temperature: 775°F (413°C) Threshold Limit Value (TLV): ppm - - 100

Short-Term Inhalation Limits: not pertinent

Odor Threshold, ppm: unavailable ----

NEPA Mazard Classification

Flammability

FIRE

Extinguish with dry chemical, elcohol foam, carbon dioxide, or water fog Lool exposed containers with water

		HARM	ACTION
• ·	INHALED	Under normal conditions vapor pressure too low to cause farm. When heated, may produce high wapor concentrations causing giddiness, dizziness, drowsiness.	Remove to fresh air. The Division of necessary. If sleepings or comb precision, get medical ettention.
EXPOSURE	SWALLOWED	Harmful if swallowed. Transient exhibaration, weakness, nausea, vomiting, abdominal cramps, possible kidney damage. 4.pz. taken internally may cause death.	Give an emetic such as mustard or salt water (1 isp. per glass) and get medical attention.
	ON SKIN	Minor skin irritation.	Nash affected areas + ith soap and water.
	IN EYES	Irritates the eyes	Flush freely with water for about

Avoid prolonged contact with skin	
Wear goggles or face shield.	•
	The second secon
6. SPILL AND/OR EMERGENCY PROCEDURES	<u> </u>
Shut-off all lines involved in the emergency that are readily as	ccessible.
Notify plant operations officer. Notify U.S. Coast Guard and local health and pollution control a	agencies, if required.
and the second of the second o	
and the same to the same of	•
7. SPILL TREATMENT REQUIREMENTS	
	The second secon
Pump off spilled material to confinement.	
Flush residual with water. Dilute with water before discharge.	
the gase of the control of the contr	
en en la companya de	
B. COMPATIBILITY WITH MATERIALS	
a. Compatibility with:	b. Preferred Materials for:
Steel - Compatible	Tanks - Steel
Aluminum - Compatible .	Pipes - steel
Brass - Compatible	Pumps - all-iron or cross fitted
	tentrifugal  Hoses - Buna-N; Butyl; Polyethyles
Stainless Steel - Compatible	eross71nked
Compatibility Chart No. 6  Most materials of construction suitable.	Baskets - JM-60
9. STORAGE CONSIDERATIONS	and the second s
No special handling problems. Steel steam coils for blending to but may have some flow problems below 20°F (-5°C)	inks are satisfactory. Centrifugal pumps prefe
Venting: Std. pressure-vacuum on fixed roof tanks.	·
D. LABELING REQUIREMENTS	
No hazard label required.	والمرابع المرابع والمرابع والمنابع والمستعدد والمستعد والمستعدد والمستعد والمستعدد والمستعد والمستعدد والم
	-
1. CLEANING PROCEDURES	1
Drain Tank, wash with wate	er and air ziry.
CP-4	
CP-4	
CP-4	are given in Appendix)
(Details of the cleaning procedure	are given in Appendix)
[Details of the cleaning procedure	are given in Appendix)
[Details of the cleaning procedure	are given in Appendix)
(Details of the cleaning procedure  2. MISCELLANEOUS  Mixing with other materials to make antifreeze can be effective)	are given in Appendix)
[Details of the cleaning procedure	are given in Appendix)

CEANESE CHEMICAL COMMINGE

CELANESE CHEMICAL COMPANY, INC.

1250 WEST MOCKINGBIRD LANE DALLAS, TX 75247

PHONE: 214-629-4000

### ETHYLENE GLYCOL

### **DESCRIFTION**

Ethylene glycol is a clear, colorless syrup-like liquid with little odor. It will dissolve in water. Ethylene glycol does not readily react with other materials or itself.

### EFFECTS ON PEOPLE

Contact with the liquid will cause skin irritation and should be avoided since ethylene glycol can be absorbed through the skin in toxic quantities. Ingestion of the liquid will cause serious injury or death. Exposure to the vapor or mist generated by heated ethylene glycol will irritate the eyes and can also lead to the absorption of toxic quantities.

### **USES**

Ethylene glycol is used in de-icing fluids and anti-freeze. It is also used as a raw material in the production of polyester resins, plasticizers, adhesives, and lacquers.

CAS No. 107-21-1 Rev. 0, 2/80

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TO THE BEST OF OUR KNOWLEDGE, THE INFORMATION CONTAINED HEREINIS ACCURATE HC. (EVER NEITHER CELANESE CORPORATION OF ANY MATERIAL AND LABILITY WHATSOEVER FOR THE ACCURACY OR COMPLETENESS OF THE INFORMATION , ONTAINED HEREIN FINAL DETERMINATION OF SUITABILITY OF ANY MATERIAL AND WHETHER THERE IS ANY INFRINGEMENT OF PATENTS IS THE SOLE RESPONSIBILITY OF THE ULER

ALL CHEMICALS MAY PRESENT UNKNOWN HEALTH HAZARDS AND SHOULD BE USED WITH DAUTION, ALTHOUGH CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, WE CANNOT GUARANTEE THAT THESE ARE THE ONLY HAZARDS WHICH EXIST USERS OF ANY CH. MICAL SHOULD SATISFY THEMSELVES BY INDEPENDENT INVESTIGATION OF CURRENT EXCHANGES AND REPORT AND MEDICAL MARKET CHARACTER WAS BUT OF CONTROLLED FOR A CONTROL

1. COMMODITY

# DIESEL FUEL

SIGNAL WORD CAUTION

COMMON SYNONYMS AND TRADE NAMES

Diesel oil (light or medium)

Fuel oil No. 1-D fuel oil No. 2-D

DESCRIPTION

Dily, yellow brown liquid Characteristic fuel-oil odor. Floats on water.

CHEMICAL FORMULA

Mixture of Hydrocarbons

**MOLECULAR WEIGHT** 

### 2. PHYSICAL PROPERTIES

Freezing Point: -30 to 0°F (-34 to -18°C)

Boiling Point: 360 to 640°F (182 to 338°C)

Density (Spec. Gravity) at  $68^{\circ}F$  ( $20^{\circ}C$ ): 6.6 lbs/gal (0.8 - 0.9)

Kinematic Viscosity, at  $77^{\circ}F$  (25°C): SSU 30-33 (1.1 - 2.1 cSt)

at 0 F (-18°C): SSU 39 ( 4 cSt)

Specific Heat, Btu/lb. F (cal/g C): 0.47

Coefficient of Thermal Expansion: per F 0.00065

Vapor Pressure: 1.5 ps ta (77.8 mm Hg) € of ( P( )

cF ( (ع 2.5 psia (129 mm Hg) @

cF ( 33.0 psia (569 mm Hg) € (32

at 68°F (20°C) D.04 psia (2 mm Hg)

Solubility in Water, 1:

Solubility of Water in Commodity, 2: Insoluble

per C 0.00117

### 3. HAZARD DATA

Flashpoint: 100 - 125°F (36 - 51°C) CC

Flammatility Limits in Air, Volume 1: 1.3 - 6

350 - 625°F (177 - 329°C) Autoignition Temperature:

Ingeshold Limit Value (TLV), ppm: Short-Term Inhalation Limits:

Door Threshold, ppm;

NFPA Hazard Classification Health (

Flammability C Reactivity

### 4. HAZARD ACTION

FIRE

Combustible.

Partially filled containers may explode in fire.

Extinguish fire with foam, dry chemical, or carlon dioxide.

Cool exposed containers with water.

		HARM	ACTION
	INHALED	Irritation of eyes, nose, and throat if present in high concentrations; also headache and slight giddiness. Liquid in lungs will cause rapidly developing edema.	Move to fresh air. If liquid gets into lungs, get meascal attention immediately.
EXPOSURE	SWALLOWED	Harmful if swallowed. Will cause nausea, vomiting, cramps, depression of central nervous system up to coma and even death; also possible kidney and liver damage. About one pint will cause death.	DU NOT INDUCE VOMITING. Give milk or water. Get medical attention.
	ON SKIN	Slightly irritating on long exposure.	Remove contaminated clothing. Wipe off and wash affected areas with soap and water.
	IN EYES	Irritation of eyes.	Flush with water for 15 minutes.

5. PROTECTIVE MEASURES IN	ANDLING S-2	িবালে মেল্ডক্তিক বিবাল		
Have adequate wentilation.	in the second of	THE THE STATE OF	CALLES TENEDETH	
Avoid prolonged breathing of				•
Avoid prolonged contact with a Keep containers closed and aw	skin. my from heat, sparks and	open flame.		
Wear googles or face shield as	nd impervious aloves	•		
Air-line or self-contained re- containing large spill.	spirator should be used '	If entry is made into	an unventilated tank or an el	illosed area
concerning targe spirit.	•			
6. SPILL AND/OR EMERGENCY I	PROCEDURES		- <u>-</u>	
		خريد ، نازان د الم		
Shut-off all lines involved to	n the emergency that are	readily accessible.	receive with the control of the cont	
Notify plant operations office Notify U.S. Coast Guard and Is	er. ocal health and pollution	n control agencies, if	required.	-
That Ben Balling The	•			
		:	•	
7. SPILL TREATMENT REQUIRER	ACA: TO	· · · · · · · · · · · · · · · · · · ·	•	
			● ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・	region of the
Pump off spilled material to c	:ontainment@t Separator. • o: other solid absorber	and transport for fi	nal disposal	٠,
Absorb residual by Vermiculite	,		10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	: · · · · ·
		च्या के विश्वपन्तर जिल्लाहरू इ.स.च्या	taffet affa en cener i des	· - 1
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	M. T. Market Market	7,222 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	### + 3	•
	141 C		<del></del>	
B. COMPATIBILITY WITH MATER	IALS		ruger garage of the government	mar 😘 🛊
_aLompatibility with:	. •	b. Pre	ferred Materials for:	•
Steel - co	mp tible		the management of the same of the same of	أنهها سالحات
	mb rine	•		•
Aluminum – co	mp-tible	•	ipes - steel:	•
Brass - co	m; tible	P	mps - all-iron or bronze	
Stainless Steel – co	mpetible	<b></b>	oses - Polyethylene cross	( Biologi
2miness 2reel - 50	ut.: CIDIE		Buna-N: Viton	• • • • • •
Compatibility Chart No.	9	G	iskets - James Dag 1961 and -	·* 1. = (4 ) (
Compatible with the usual	construction materials.		<u> </u>	
9. STORAGE CONSIDERATIONS			Supply to the second	
				Transfer of the
Venting: Std. pressure-vacuum: State of New Jersey Chapt. 16	vents may be used on fix	ed roof tanks; however	r-Slandard Jeturn bends are a t based on tank wive for mate	cceptable.
vapor pressures over 02 psia 2	at 30°F.	ක්රීරක්රාකුහරිලය. <sub>වුවල</sub> ් වු		:
		ur folgsveniger	and the control of th	즐겁:*
			e summer la la regional de la companya de la compa	
10. Labeling requirements —				
		A Property		
None required.	A STATE OF THE STA	i <del>mandina dalah sang B</del> arang Barangan. Kabupatèn banggan banggan	المستندة المستندة المستندة	
		The second of the second		<u> </u>
11. CLEANING PROCEDURES	A HOLD A PART CONTRACT	e garage and a second a second and a second and a second and a second and a second	to the second of the second of the second	•
	Drain tank, st	eam, then flush with	detergent solution, and air	ory.
CP-7	THE BUILDING			•
	Maria Promisi i Sela Maria Maria Maria Maria	rent of the following of the	ACCOUNT OF A SAME	÷ -
• •	I stails of the cleaning			
	1 States by the Creaming	procedure are given in	Appendix	****
2. MISCELLANEOUS	And the second s	Similari mini makimismi i		
and the state of t		en i en i la part <del>gritten</del> a Till. T	Albert 1817	•.
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	ي بدار پيتونيد در دنيستا <del>ن او دار</del> د دار پيتونيد			É
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		000	<b>≟</b>	
	Section of the sectio	ne gaine per man est e there are the prior and		•
Compiled by: P. Budininkas	Date: April 1976 Rev	vised by:	Date:	e er muse de 12
	, <del></del>	<del></del>		

				_			SIGNAL WORD	
			CORN				ATTENTION	
•					restration of the second secon	on <del>Line</del> Onsign the		
COMMO Nesola o Naize of	11	ND TRADE NAMES		ily liquid eristic odor		CHEMICAL FORMULA		
		in and the second of the secon	Floats on water	r		MOLECULA Mixture	AR WEIGHT	
2. PHYS	CAL PROPERTIE	<u> </u>	<u></u>				Heading	
Boiling F Density ( Kinematic	(Spec. Gravity) ( Viscosity, et at	( °C) at 68°f (20°C): 7.	7 1bs/ga1 (0.92 ) 1600 (1000 cSt) (est	imated) app	2.5 ps 11.0 ps proxat 58°f	1a (129 mm 1a (569 mm (20°C) D.C	Hg) • °F f( °C) Hg) • °F f( °C) Hg) • °F f( °C) 03 ps1a (3.5mm Hg)	
	t of Thermal E	cally (): 11.35 Expansion: per of per of		Solubility o	F Water in	Commodity,	3: Insoluble	
	a: 490 F ( 25			Hez	A ard ssification		Flammatility	
Autoignit Threshold Short-Ter	non Jemperature Limit Value (T	ir, Volume %: : 740 °F ( 393°C) LV), ppm: nits:		Lie	Healt	ch D	D Reactivi	
Autoignit Threshold Short-Ter Udor Thre	on Jemperature Limit Value (T Inhalation Li	: 740 °F ( 393°C) LV), ppm:		Lie	Healt	X		
Autoignit Threshold Short-Ter Udor Thre	ion Jemperature Limit Value (Tim Inhalation Linibold, ppm: DACTION Combustible. Extinguish ent	: 740 °F ( 393°C) LV), ppm:	l or carbon dioxid		Heal			
Autoignit Threshold Short-Ter Udor Thre	ion Jemperature Limit Value (Tim Inhalation Linibold, ppm: DACTION Combustible. Extinguish ent	: 740 Pr ( 393°C) LV), ppm: nits:	or carbon dioxid		Heal			
Autoignit Threshold Short-Ter Udor Thre	ion Jemperature Limit Value (Tim Inhalation Linibold, ppm: DACTION Combustible. Extinguish ent	: 740 Pr ( 393°C) LV), ppm: nits:	or carbon dioxid		Heal			
Autoignit Threshold Short-Ter Udor Thre	ion Jemperature Limit Value (Tim Inhalation Linibold, ppm: DACTION Combustible. Extinguish ent	th foam, dry chemical containers with water mormal temperatures	HARM or pressure, no har		Heal			
Autoignit Threshold Short-Ter Udor Thre	Init Value (To Inhalation Linit Value (To Inhalation Linithold, ppm:  DACTION  Combustible. Extinguish entation exposed at the	th foam, dry chemical containers with water mormal temperatures	HARM or pressure, no has		Heal			
Autoignit Threshold Short-Ter Odor Thre	Init Value (To Inhalation Linit Value (To Inhalation Linithold, ppm:  DACTION  Combustible. Extinguish entation exposed at the	th foam, dry chemical containers with water normal temperatures	HARM or pressure, no har	rm at	Heal			

	···
CORN OIL	
5. PROTECTIVE MEASURES IN HANDLES	Top CE.
Have adequate ventilation.  Reep cuntainers closed and away from hezt.	
6. SPILL AND/OR EMERGENCY PROCEDURES	
Shut-off all lines involved in the emergency that are readily Notify plant operations officer. Notify U.S. Coast Guard and local health and pollution control	
7. SPILL TREATMENT REQUIREMENTS  Pump off spilled material to containment at separator.  Absorb residual by Vermiculite or other solid absorbent and tr	rensport for final disposal.
B. COMPATIBILITY WITH MATERIALS	
a. Compatibility with:  Steel - compatible  Aluminum - compatible  Brass - compatible  Stainless Steel - compatible  Compatibility Chart No. 13	t. Preferred Materials for:  Tenks - steel  Pipes - steel  Pumps - all-iron or bronze fitted  Hoses - Polyethylene crosslinked; £ tyl  Gaskets - JM-60
Q. STORAGE CONSIDERATIONS  Venting: Std. pressure-vacuum vent may be used on fixed roof t Heating required to make the product flow readily; thus heat c pumps may be required.  Avoid overheating since product is somewhat heat sensitive.	anks. oiled and/or insulated tanks and heat-traced piping and

hone required.

### 11. CLEANING PROCEDURES

Drain tank, wash with detergent and air dry.

CP-7

(Details of the cleaning procedure are given in Appendix)

### 12. MISCELLANEOUS

092

Date: Sept. 1976 Revised by: P. Budininkas Compiled by: Date:



1. COMMODITY

# COTTONSEED OIL

SIGNAL WORD

ATTENTION

COMMON SYNONYMS AND TRADE NAMES

DESCRIPTION

Dily, pale yellow, viscous liquid Floats on water.

CHEMICAL FORMULA

MOLECULAR WEIGHT

British Balance with a second of the co

2. PHYSICAL PROPERTIES

Freezing Point: 32 PF ( D °C)

Boiling Point: >450 °F (>232°C)

Density (Spec. Gravity) at 68°F (20°C): 7.7 1bs/gal (0.92 )

Kinematic Viscosity, at 77°F (25°C): SSU 5035 (1087 cSt)

at100°f (38 °C): SSU 2015 (435 cSt)

Specific Heat, Btu/lb. 4 (cal/g %): 0.48

Coefficient of Thermal Expansion: per F 0.00135

- Vapor Pressure: 1.5.psia (77.8 mm 49) 2 ... 95 1

ー ジ 2.5 psia (129 mm fg) キャーティン て) 11.0 psia (569 am Hg) P

at 58°F (20°C) 0.04 psia ( 2 am Hg)

TO A NUMBER OF SECOND

The organization as a second

Solubility in Water, X: Insoluble

Solubility of Water on Commodity. 3: \_\_\_\_Insoluble .

3. HAZARD DATA

Flashpoint: 486 4 ( 2520C) CC

Flammatility Limits in Air, Volume X: Unavailable

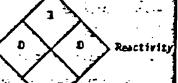
Autoignition Temperature: 650°f (343°C)

Threshold Limit Value (TLV), ppm:

Short-Term Inhalation Limits:

Door Threshold, ppm:

) FPA lazard ---Classification Health .



Flammability

### 4. HAZARD ACTION -

FIRE

Combustible. Extinguish with foam, dry chemical or carbon dioxide. Cool exposed containers with water.

<b>1</b>	J		The second secon
		HARM	ACTION
		Because of low wapor pressure, no harm-at -	• 100
	INHALED	normal Lemperatures.	THE WAR THE PARTY OF THE PARTY
EXPOSURE	SWALLOWED	None	+-3157 
	ON SKIN	None	
	#N EYES	May irritate eyes. 003	Flush with water for 15 minutes.

## S. PROTECTIVE MEASURES IN HANDLING STO

Have adequate ventilation. Keep containers closed and away from heat, sparks and open flame.

### 6. SPILL AND/OR EMERGENCY PROCEDURES

Shut-off all lines involved in the emergency that are readily accessible. Notify plant operations officer. Notify U.S. Coast Guard and local health and pollution control agencies, if required.

### 7. SPILL TREATMENT REQUIREMENTS

Pump off spilled material to containment at separator.

Absorb residual by Vermiculite or other solid absorbent and transport for final disposal.

### 5. COMPATIBILITY WITH MATERIALS

a. Compatibility with:

Steel - competible

Aluminum - compatible

Brass - noncompatible

Stainless Steel - compatible

Compatibility Chart No. 13

b. Preferred Materials for:

Tanks - steel

Pipes - steel

Pumps - all-iron

Hoses - Polyethylene crosslinked; Butyl

Geskets - JM-60

### S. STORAGE CONSIDERATIONS

Venting: Std. pressure-vacuum vent may be used-on fixed roof tanks.

Since heating is required to make the product pum; able, heat-coiled and/or insulated tanks and heat-traced piping and bumps will be required.

Avoic overheating.

### 10. LABELING REQUIREMENTS

None required.

### 11. CLEANING PROCEDURES

Drain tank, wash with detergent and air dry.

CP-7

(Details of the cleaning procedure are given in Appendix) =

### 12. MISCELLANEOUS

094

Compiled by: P. Budininkas

Date: May 1976

Revised by:

Date:

	٠.		•			. 40.	J-11	
1. COMM	ODITY			. 4		SIGNAL W	YORD	
	The same approximate the second	C	OCONUT	OIL		ATTENT	TION	
COMMON Ecconut p Ecconut b	ita mfa	ND TRADE NAMES	DESCRIPTION White, semi-solid fat Characteristic odor Floats on water		CHEMICAL F  Mixture o  MOLECULAR  Mixt	f fatty acids		
Freezing Boiling Po Boiling Po Density [ Kinematic Specific i	Viscosity, at atl Heat, Btu/1b. The of Thermal E	(20-25°C) (200°C) at 68°F (20°C): 7.7	lbs/gal (D.92 ) 19 ( 25 cSt) approx. 40-148 (30-32 cSt) Solub . D.5	Pressure: 1.5 at 50 at 50 thirty in Water, 111ty of Water 1	psia (77.8 mm H psia (129 mm H psia (569 mm H sof (20°C) <0.1 %: Negligible	g) # PF ( g) # PF ( psia {<5 pri		
Flashpoin Flammabil Autoignit Threshold Short-Terr	t: 420 F { 21 ity limits in A ion Temperature	5°C) EC; 520°F (27) ir. Volume %: Not e : °F ( °C) LV). ppm: Not estab	established	Hazard Classificat (Estimated)	fon alth D		activ	
4. HAZARI	ACTION	وجريسية والمامة معموم سيتت	ga maka ke ili ke sukabu kabupun gulu. B			to assert	<del></del>	
FIRE			l or carbon dioxide.	· · · · · · · · · · · · · · · · · · ·		Tentres Tentres Tentres	7	
<u> </u>		<del></del>	HARM	1	ACTION		.::	
رس معدد در است. را بر است. را بر است.	SNHALED	Because of low vapor normal temperatures	r pressure, no harm at		Int years	THE PARTY OF		
EXPOSURE	SWALLOWED	None	<del></del>			: <del></del>		
	ON SKIN	None			200 ASA 2005 W. S			
•	<del></del>	<del> </del>				<del></del>		

Flush with water for 15 minutes.

May irritate eyes.

## 5. PROTECTIVE MEASURES IN HANDLING S.D. Have adequate ventilation. Acep containers closed and away from heat. 6. SPILL AND/OR EMERGENCY PROCEDURES Shut-off all lines involved in the emergency that are readily accessible. Notify plan: operations officer. Notify U.S. Coast Guard and local health and pollution control agencies, if required. 7. SPILL TR. ATMENT REQUIREMENTS Pump off spilled material to containment at separator. Absorb residual by Vermiculite or other solid absorbent and transport for final disposal. 8. COMPATILILITY WITH MATERIALS a. Compatibility with: b. Preferred Materials for: compatible Steel Tanks steel compatible תי יונתעוב Pipes steel compatible Brass all-iron or bronze fitted Pumps compatible Stainless Steel Polyethylene crosslinked; Butyl Hoses Compat bility Chart No. JM-60 Geskets -9. STORAGE CONSIDERATIONS Venting: Str. pressure-vacuum vent may be used on fixed roof tanks. Since heating is required to make the product flow readily, heat-coiled and/or insulated tanks and heat-traced piping and pumps may be required. Avoic overheating since product is somewhat heat sensitive. 10. LABELING REQUIREMENTS None required. 11. CLEANING PROCEDURES Drain tank, wash with detergent or caustic solution, air dry. CP-7 or CP-8 (Details of the cleaning procedure are given in Appendix) 12. MISCELLA NEOUS

<u>096</u>

Compiled by: P. Budininkas

Date: May 1976

Revised by:

Date:

1. COMMODITY

# CAUSTIC SODA SOLUTION

SIGNAL WORD

DANGER

. (50%, 73%)

Sodium hydroxide solution Lye

DESCRIPTION Thick, colorless liquid

Odorless . -Sinks and mixes with water CHEMICAL FORMULA

NaDH in water.

MOLECULAR WEIGHT

at 58°F (20°C) D.72 psia (5.3 mm Hg)

A. T. 15 T. 23

CT. SALLEDCES THE FIREST LINES .T.

2 PHYSICAL PROPERTIES (50% Solution)

COMMON SYNONYMS AND TRADE NAMES

Freezing Point: 41°f (5°C); crystallization begins at 54-59°F

Boiling Point: 288-298°F (142-148°C).

Density (Spec. Gravity) at 68°F (20°C): 12.7 lbs/gal (1.52)

Kinematic Viscosity, at 77°F (25°C): SSU 251 (54 eSt)

°F ( °C): \$\$U

Specific Heat, Btu/lb. f (cal/g ft): 10.79

Coefficient of Thermal Expansion: per "F per .L

in Commentation of the

Vapor Pressure: 1.5 psta [77.8 mm Hg] @ of water 2 5 psta [120 mm Ho] B

Solubility in Water, 3: In all proportions

Health (

Solubility of Water in Commodity . In all proportions

of water 2.5 psia (129 mm Hg) 8

3. HAZARD DATA

Flashpoint: None

None Flammability Limits in Air, Volume 2:

Autoignition Temperature: None

Threshold limit Walue (TLV), ppm: 2 mg/m3 (in the form of mist or spray)

Short-Term Inhalation limits:

MEPA . Hazard Classification

Flammability

## 4. HAZARD ACTION

Not Tlammable.

FIRE ..

EXPOSURE

ACTION -

If breathing is difficult, give onygen.

If breathing stops, apply artificial respire

The product of the control of the product of the control of the co

Move to fresh air.

Inhalation of mist or spray irritating to nose and throat and will cause coughing and \_ JNHALED choking, inflammation of the lurgs. Poisonous if swallowed.

Ingestion will cause burning pain of mouth, throat and stomach, nausea, bloody womiting, swelling of throat with possible suffication, shock, coma, and possible death.

Rhout one ounce may cause death

The State of the last

HARM .

\_\_\_\_

ON SKIN

**SWALLOWED** 

Causes severe burns. Although no pain may be felt im ediately. caustic begins to dissolve skin on contact.

Causes severe eye burns. IN EYES May cause blindness.

tion. Get medical attention Mf. Ill effects noticed. Act puickly.

Do NOT induce vomiting. Have victim drink milk, water, juices or diluted winegar = Bet medical attention immediately.

Act quickly. Remove contaminated gipthing. \_ immediately wash affected areas with water. Launder contaminated clothing Defore reuse. Get medical attention immediately:

Contract of the second

Immediately flush eyes with water for 45 minutes. Files Financial Aug. Archi. Set-medical attention immediately .... 

### 5. PROTECTIVE MEASURES IN HUNDLING

Mave adequate ventilation. Avoid breathing of mist or spray.

Avoid contect with skin. Keep containers closed.

bear protective goggles or face shield, impervious gloves and impervious overclothing. .

### 6. SPILL AND/OR EMERGENCY PROCEDURES

Shut-off all lines involved in the emergency that are readily accessible.

Notify plant operations officer.

Notify U.S. Coast Guard and local health and pollution control agencies, if required.

### 7. SPILL TREATMENT REQUIREMENTS

Pump off spilled material to containment.

Flush residual with water and dilute with large excess of water before discharge, or neutralize with a weak acid solution, such as diluted acetic acid.

### & COMPATIBILITY WITH MATERIALS

a. Compatibility with:

noncompatible when stored at Steel

elevated temperature

noncompatible Aluminum.

noncompatible Bress

Stainless Steel. compatible to about 200°F

Compatibility Chart No. 3

Causes stress corrosion cracks in steel above 118°F (48°C) and

Geskets in IB-8 stainless at higher temperatures. Causes pits in copper containing alloys. Reacts violently with aluminum, zinc and tin liberating hydroge gas that may cause explosions. Slowly dissolves copper, iron Reacts violently with which may cause unacceptable discoloration and contamination for some uses.

### 9. STORAGE CONSIDERATIONS

Venting: Std. pressure-vacuum or open vents required on fixed roof tanks. Because of high solidification temperature, it is stored at elevated temperatures (particularly the 73% solution); thus, heat coiled tenks and heat-traced piping and pumps will be required. Heat exchanger, external, nickel or kanigen plated for pumpout heat-up to provide safety factor against crystallization during transit.

### 10. LABELING REQUIREMENTS

Corrosive liquid.

### 11. CLEANING PROCEDURES

Drain tank, flush with water, remove solution and air dry.

098

b. Preferred Materials for:

Tanks

Pipes

Pumps

Hoses

Steel see Temp. Limitations

stainless steel 316

Natural rubber

3M-60

all-iron; nickel alloy

internally lined steel, Stainless

Polyethylene crosslinked; Butyl;

316

CP-5

(Details of the cleaning procedure are given in Appendix)

### 12. MISCELLANEOUS

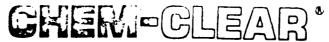
Physical properties of 73% caustic solution are:

Freezing Point: 145°F (63°C); solidifies at 144°F (62°C)

Boiling Point: 370-388°F (16n-198°C)
Density (Sp. gravity) at 68°F (20°C): 14.7 lb: 'gal (1.76)
Both 50% and 73% caustic solutions are hygroscopic and deliquescent.

Addition of water generates heat; thus, boiling and spattering of hot caustic solution may result. If dilution is required, add constic sode solution slowly to cold water.

Date: Sept. 1976 Compiled by: F. Budininkas Revised by: Date:



### 11800 S. Stony Island Avenue Chicago, Illinois 60617 (312) 646-6202

CHT #410

CHI #410		(312)	646-6202		
WASTE SOURCE Liquid Dy					
WASTE GENERATOR Hannah 1	larine				
WASTE DESCRIPTION Caustic	Wash Water				
RECEIPT DATE 6/3/82		V	OLUME		
	V	NASTE CHAR	ACTERISTICS		
COLOR/APPEARANCE Brow	m/Clear		ATER MISCIBILITY	Yes	<del></del>
% FLOATER ND		%	OIL ON ACIDIFICATIO	N O	
% FREE OIL ND		····			
	1 1	1			1
	As	_		As	
TEST	Rec.	LEACH.	TEST	Rec.	LEACH
РН	12.9		Ag, ppm	11	
% TOTAL SOLIDS	11.77		As, ppm	< _1	
% DISSOLVED SOLIDS			Ba, ppm	ND	<u> </u>
% SUSPENDED SOLIDS	0.11		Cd, ppm	סא	
SSETTLEABLE SOLIDS	ND		Cr, ppm	סא	<u> </u>
FLASH POINT C			Cr (Hex), ppm		
OIL AND GREASE, ppm	296		Cu, ppm		+
PHENOLS, ppm	4.75		Hg, ppb	26	<u>i</u>
CHLORIDE, ppm			Ni, ppm	ND	·•·
BROMIDE, ppm			Pb, ppm	2.0	
PHOSPHATE, ppm (TOTAL)			Se, ppm	4 2	ļ.,
COD, ppm	45.072		Zn, ppm	1.25	
BOD, ppm			Fe, ppm	20.0	<u> </u>
ACIDITY mg/1 as CaCo <sub>3</sub>			B, ppm		ļ
ALKALINITY, mg/1 as CaCo <sub>3</sub>					<u> </u>
CYANIDE, ppm (TOTAL)	1.25				
CYANIDE, ppm (RELEASE)					<u> </u>
SULFIDE, ppm (TOTAL)	15.5				<u> </u>
SULFIDE, ppm					<u> 1</u>
	<b>T</b> 1	DEATMENT C	UADACTEDICTICS		
AUCUTO AL IZATIONI EQUINZAL ENI		REATMENT	HARACTERISTICS	<u>-</u>	
NEUTRALIZATION EQUIVALENT TREATMENT WITH MIX TANK	(pn 10)		( m1 WASTE+	m1 MiX TANK)	
1		1	1		1
	MIX	MIX+		MIX	MIX+
TEST	TANK	Sample		TANK	Sample
% SOLIDS Produced by Volume			IRON, ppm		<u> </u>
% SOLIDS Produced by Weight		<u> </u>	NICKEL, ppm		<u> </u>
COD, ppm		<u> </u>	ZINC, ppm		
CYANIDE (TOTAL), ppm			O&G, ppm		
CYANIDE (RELEASABLE), ppm		ļ	COPPER, ppm		
BARON, ppm			LEAD, ppm		<b></b>
CADMIUM, ppm		<u> </u>	MERCURY, ppb	·	
CHROMIUM (TOTAL), ppm					<u> </u>
CHROMIUM (HEX), ppm					
				<del></del>	
ACCEPTED:		<u> </u>	REJECTED:		.1
COMMENTS					
COMMENTS	<del></del>	<del></del>			
			099		

SPECIAL WASITEWANALYSIS REPORT	SPECIAL	WASTEWANALYSIS RE	PORT
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	SALES	CODE
	RVD	030101
	MACTED	DOEL E CHEET CODE

0328

	LABORATORY: Technical Center	<del></del>	WASTE PROF	ILE SHEET CODE
•	PROFILE SHEET RECEIVED ON: 11/20/81	REPRESENTATIVE	SAMPLE RECEIVED	ON:11/20/81
	CERTIFICATE OF REP. SAMPLE RECEIVED:	11/20/81	SAMPLE TAKEN:	11/16/81
<del></del>	PROPOSED TREATMENT/DISPOSAL FACILITY:	Chicago/CID	<del></del>	

THE ANALYSES BELOW REPORTED WERE SELECTED BY ME, BASED UPON THE GENERATOR'S REPRESENTATIONS IN THE PROFILE SHEET AND ANY APPLICABLE WASTE ANALYSIS PLAN ESTABLISHED BY THE PROPOSED FACILITY FOR WASTE OF THIS TYPE. ANALYSES REQUIRED BY A WASTE ANALYSIS PLAN ARE INDICATED BY AN ASTERISK ( \* ).

DATE OF ANALYSIS: 11-30-81 LAB MANAGER: John W. Kologanio

Test Hannah	As Received	Leachate	Analyst Initials	Test	As Received	Leachate	Analyst
Specific Gravity	Heceiveo		Initials		Heceived	200011010	Initials
pH	11.5		<del> </del>			L	<del> </del>
Acidity, % as	+1112	<del></del>					<del>}</del>
	0.4 %		HR	Phenois, mg/l	10.0		<del> </del>
Alkalinity, % as NH4 OH	+0.7 /9			Cyanides, as CN, Total, mg/l	< 10.D		
B O D <sub>a</sub> , mg/l				Cyanides, as CN, Free, mg/l	170.0		<del> </del>
Total Solids @ 105°C	23.12%		· · · · · ·				<del>                                     </del>
Total Dissolved Solids, mg/l	10.0.10.10			Nitrogen, Ammonia, as N, mg/l			<del>                                     </del>
Total Suspended Solids, mg/l	1	·		Nitrogen, Organic, as N. mg/l			<del> </del>
Residue on Evaporation @ 180°C				Total Kjeldahl Nitrogen, as N, mg/l			
Flash Point, F*	>212.			Total Alkalinity (P), as CaCOs, mg/l		<del></del>	<b>!</b>
Ash Content, on ignition	17.072			Total Alkalinity (M), as CaCO2, mg/l			<del> </del>
Heating Valve, BTU/Ib	11.024			Total Hardness, as CaCO <sub>3</sub> , mg/l			<del>                                     </del>
"Acid Scrub," gNaOH/g	<del>                                     </del>			Calcium Hardness, as CaCO <sub>2</sub> , mg/l		<del></del>	
•	<del> </del>		i	Magnesium Hardness, as CaCO <sub>3</sub> , mg/l			
Arsenic, as AS, mg/l	3.20						<del> </del>
Barium, as Ba, mg/l	326.						1
Boron, as Bi, mg/l	1		_	Oil and Grease, mg/l			<del> </del>
Cadmium, as Cd, mg/l	1.13						
Chromium, Total as Cr. mg/l	7.39		<del></del>				
Hexavalent Chromium @ Cr, mg/l				Aldrin, mg/l			
Copper, as Cu, mg/l	6.32			Chiordane, mg/l			
Iron, Total as Fe, mg/l				DDT's, mg/l			
Iron, dissolved, as Fe, mg/l				Dieldrin, mg/l			
Lead, as Pb, mg/l	26.8			Endrin, mg/l			
Manganese, as Mn, mg/l				Heptachior, mg/l			
Magnesium, as Mg, mg/l				Lindane, mg/l			
Mercury, as Hg. mg/l	ス・ル			Methoxychior, mg/l			
Nickel, as Ni, mg/l	2.91			Toxaphene, mg/l			
Selenium, as Se. mg/l	1.46			Parathion, mg/l			
Silver, as Ag, mg/t	0.46			2, 4, D, mg/l			
Zinc, as Zn, mg/l	146.4			2, 4, 5, TP (Slivex), mg/l			
	<del> </del>			PCB's, mg/l			
Bicarbonates, as HCOs, mg/l							
Carbonates, as CO <sub>2</sub> , mg/l	]I	•					
Chlorides, as Cl, mg/l							
Fluorides, as F, mg/l							
Nitrate, as NO <sub>3</sub> , mg/l							
Nitrite, as NO₂, mg/l	11						
Phosphate, as P, mg/l							
Sulfate, as SO <sub>4</sub> , mg/l							
Sulfides, as S, mg/l College	1<2.0						

FORM WMI-52 (Rev. 11-5-80) ©1980 WASTE MANAGEMENT, INC. 100 This report has been prepared for the exclusive use and benefit of Chemical Waste Management. No representation concerning sample validity or analytical accuracy or completeness is hereby made to any other person receiving this report.

PERCENT ACIDITY ALKALINITY TO . 4 PH 1 . 5 SOLIDS 2 3 . 1 2 CONTENT ASH 17.07%

EY COMPONENT NAME

PERCENT KEY COMPONENT NAME

PERCENT KEY COMPONENT NAME

PERCENT KEY COMPONENT NAME

PERCENT NAME

PERCENT KEY COMPONENT NAME

PERCENT NAME

P

USEPA HAZARDOUS WASTE NO. DOOQ. . . . . (If Hazardous)

*##	CARD TYPE	DATE	2/26	82 1	PSWÇ	AUTHORI	ZATION NUME	BER		- <del>- 13</del>	TRANS CODE		ENTERED cy Use)	15 TC /	7 <b>4 1</b> 5	/ <sub>10 10</sub>
•			/		·		رں ،	ISTE CHAR	ACTERI	-		24			17 10	19 30
	7 0		METAI	KEA	TOTAL	(PPM)	EP TOXICITY	(PPM)			TOTAL	(PPM)	EP TOXICI	TY (PPI	u\	
	70		CN T	<u> </u>	TOTAL	10.0		•	Cu	, KLI	TOTAL	4.3	104161	11 (177)	עי	
•			Ag	21 —	23	30	آو	38	Hg	39	41	مر. 48 1. 2. ا	49		4	
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ILLINOIS ENVIRONMENTAL PROTECTION AGENCY DIVISION OF LAND/NOISE POLLUTION CONTROL SPECIAL WASTE DISPOSAL APPLICATION

Renewal Permit #800302 PSNC AUTHORIZATION NUMBER 800300 CODE (Agency Use) WASTE HAULER Chemical Waste Management of Illinois HAULER REGISTRATION NUMBER NAME P.O. Box 1296 COMMUNITY Calumet City 60409 AREA CODE 312 TELEPHONE 8911500 ZIP STATE WASTE GENERATOR GENERATOR 6 2 0 0 1/1: 6 NAME Hannah Inland Waterways P.O. Box 189 ADDRESS COMMUNITY Lemont STATE I11. ZIP 60439 AREA CODE 312 TELEPHONE 257 5456 <u>Dino Fabbre</u> GENERATOR CONTACT NAME DUNS NUMBER PROCESS NAME GENERIC HASTE NAME Caustic Waste Water IUPAC WASTE NAME TOTAL ANNUAL WASTE VOLUME **VOLUME UNITS** WASTE PHASE 1 - SOLID TRANSPORT FREQUENCY WASTE CLASS 1 = CUBIC YARDS 2 = SEMI-SOLID (Agency Use) 2 = GALLONS 1 - ONE TIME 5 - MONTHLY 3 = LIQUID 2 - DAILY 4 - 6AS 6 = BI-MONTHLY 3 - WEEKLY 7 - QUARTERLY 4 = BI-WEEKLY 8 = SEMI-ANNUALLY (Code either "1" for Low, "2" for Medium, or "3" for High as appropriate for columns 21 through 26): INHALATION INGESTIVE TOXICITY FLASH POINT 22120F+ ALPHA RADIATION 31-(pCi/L) I - ORGANIC 2 = INORGANIC **PERCENT** PERCENT PERCENT ~2. 1 M 1=. 9 SOLIDS 21.62 KEY COMPONENT NAME KEY COMPONENT NAME PERCENT i water WWWONIAW AADBOXIDE -- #

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E.P.A. - D.L.P.C. 104 STATE OF ILLINOIS

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RESPONSE NO. 4

FOR AGENCY USE ONLY							
OR AGENCY USE LLIP HIWIC CARD (210) TRANS (A)	DATI ENTER	·/ /	١,,				
GENERAL INSTRUCTIONS REFER TO THE SPECIFIC INSTRUCTIONS CONTAINED IN THIS BOOKLE The information requested in this report is required by I		_	VG THIS				
Please print/type with elite type (12 characters per inch)			•				
L NON-REGULATED STATUS							
Complete the section only if you did not generate regulated quantities of hazardian was year consent by the report. Order the one numeral code of that 5 that hest describes year measurement for evaluation of codes, and maken in Comment Section.  1. No Hazardous Waste Shipped Off-Site.							
Small Quantity Generator							
3 Exempt							
4 Beneficial Use							
5 Closed  B. This installation's Non-Regulated Status is expected to apply:							
6 For 1986 only, explain in Comment Section.							
7 Permanently, explain in Comment Section.							
8 Other, explain in Comment Section.							
II. REGULATED STATUS							
See instructions for completing this and following sections.							
III. GENERATOR'S USEPA I.D. NUMBER IV. GENERATOR'S ILLINOI	S I.D. NU	<b>IMBER</b>					
[I <sub>1</sub> L <sub>1</sub> D <sub>1</sub> O <sub>1</sub> 6; 9, 4; 9, 6, 2, 4, 8] [O <sub>1</sub> 4 <sub>1</sub> 3 <sub>1</sub> 8 <sub>1</sub> O <sub>1</sub> 2 <sub>1</sub> O <sub>1</sub> (	<u>0, 0, 4,</u>						
V. NAME OF INSTALLATION	30						
HANNAH MARINE CORPORATION, SHIPYARD DIVISION							
VI. INSTALLATION MAILING ADDRESS							
ROUTE 83 & ARCHER AVENUE							
Street of P.(). Box							
LEMONT	IL	60439					
City or Town VIL LOCATION OF INSTALLATION (if different than section VI above)	State	Zip Code					
SIGN OF ROAD PARTIES		<del></del>					
LEMONT	IL	60439					
City or Town	State	Zip Cnde					
VIII. INSTALLATION CONTACT							
VOTAVA, GEORGE							
VOTAVA, GEORGE Name (last and (rst)	<del></del>	<del></del>					

The Agency is auditorized to respon the internation tasks flower Researt Statutes, 1983. Chapter #1.2, Sections 1004 and 1023 (162) Declinate of the internation is respond fashing to do so has result in a cool penalty up to \$35,000 for each disc the tasker continues, a time up to \$3,000 tention and improviment up to \$3,000. The form has been approved by the Forms Mosagement Center.

IX. CERTIFICATION

Eccetaly carder presilty of law that I have presently examined and ain tambur with the information submitted in this and all attached charments, and that based on my sugary of these subsection manuschieds required by obtaining the internation. These set into the submitted attenuation is true, accurate and complete Lampistee that there are significant penalties for submitting take ascendants in the based of the providence of the architecture.

GEORGE VOTAVA, MGR. SHIPYARD DIV. Signal of Krymes Trainer

2-18-87 Date Signed

Page 101011 of 3

6

## ILLINUIS ENVIKONMENTAL PROTECTION AGENCY $|\mathbf{50}|$ generator annual hazardous waste report

This report is for the calendar year ending December 31, 1986

YVII PAGE NUMBER

10:0:2

FOR AGENCY USE ONLY CARD [510] TRANS 4 (012) / (218) / (817) FOR AGENCY USE LLIPIHIWICH TYPE CODE X. GENERATOR'S USEPA LD. NO. XL GENERATOR'S ILLINOIS EPA LD. NO. XIL FACILITY'S USEPA LD. NO. 0 4 3 8 0 2 0 0 0 0 4 I, L, D, O, 6, 9, 4, 9, 6, 2, 4, 8 [I | L | D | O | O | O | 6 | O | 8 | 4 | 7 | 1 XIII. FACILITY'S ILLINOIS EPA I.D. NO. XIV. FACILITY'S NAME / ADDRESS 10131116101010101511 CHEM CLEAR Phone (312) 646-6202 11800 S. STONY ISLAND AVE. CHICAGO IL 60617 XV. WASTE IDENTIFICATION Street (P.O. Box) City Zφ D. RCRA HAZARDOUS LINE **DESCRIPTION OF** AMOUNT OF WASTE DENSITY WASTE NO. WASTE (gallons only) (lbs. / gal.) NO. (see instructions) D<sub>1</sub> O<sub>1</sub> O<sub>1</sub> 2 0,0,0,1 0 10 10 14 14 18 15 10 10 10 18 1 . [5 WASTE ALKALINE SOLUTION 01010 2 47 68 0,0,0,3 67 68 80 84 0,0,0,4 67 68 80 0, 0, 0, 5 0 0 0 0 80 84 0,0,0,7 47 68 0,0,0,8 80 81 0,0,0,9 77 80 81 84 0,0,1,0 80 81

MANAGENCY

TYPE

 $|\mathbf{b}\,\mathbf{U}|$  generator annual Hazardous waste report

This report is for the calendar year ending December 31, 1986

FOR AGENCY USE ONLY 10121/12181/1817 TRANS (A) . CARD [610] CODE

X. GENERATOR'S USEPA LD. NO. XL GENERATOR'S ILLINOIS EPA LD. NO.

0 4 3 8 0 2 0 0 0 4 11 L D O 6 9 4 9 6 2 4 8

V.NL GENERATOR'S NAME/ADDRESS

FOR AGENCY USE LIPHIWICI

HANNAH MARINE CORPORATION, SHIPYARD DIVISION Phone ( 312) 257-5457

LEMONT ROUTE 83 & ARCHER AVENUE 60439 Street (P.O. Box) City State Ζφ

XVIII. LIST (	OF TRANSPORTATION SERVICES (HAULERS) USED:			
A. LINE NO.	B. TRANSPORTER'S NAME / ADDRESS	C	TRANSPORTER'S USEPA LD. NO.	D TEANSFORT BUNOS IP ID NO
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0) <u></u> M		95	106	107 113
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			FOR AGENC	Y USE ONLY					
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	TAGE ROAD, SUI	TE 101							
Street or P.O. Box									
BURR RIDO	Œ					<u> </u>	60521		
City or Town VIL LOCATION	OF INSTALLATION	(if differe	ent than s	ection Vi	above)	State	Zip Code	3	
RT. 83 AM	ID 107TH STREET	r							~
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LEMONT						IL	60439		Ć
City or Town						State	Zip Code	:	a
VIIL INSTALLAT	ION CONTACT								7
VOTAVA, G									
Name (last and firs	•								
(312) 257								. <del>-</del>	4
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George Vota	va. Mgr. Shipy	rard Dis	, -£/,	en o	Vota	-	1_	-29-86	
Print/Type Na		<u> </u>	Signature o	Authorized	Representati		1	Date Signed	
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# GENERATOR ANNUAL HAZARDOUS WASTE REPORT This report is for the calendar year ending December 31, 1985 (cont.)

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GENERATOR ANNUAL HAZARDOUS WASTE REPORT

This report is for the calendar year ending December 31, 1985 (cont.)

		<del></del>
f	FOR AGENCY USE ONLY  GENCY USE [LIPIHIWIC] CARD [6] 01 TRANS [A]  1 5 TYPE 6 7 CODE 8	DATE LII/LII/LII ENTERED • #
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III II D	1016191419161214181 29 30 39	
V.VL GENI	ERATOR'S NAME/ADDRESS	
Name	HANNAH MARINE CORPORATION, SHIPYARD DIVISION	Phone (312 ) 257-5457
	RT. 83 & 107TH STREET LEMONT	IL 60439
Street (P.C	D. Box)  City  OF TRANSPORTATION SERVICES (HAULERS) USED:	State Zip
A. LINE NO.	B. TRANSPORTER'S NAME / ADDRESS	C. TRANSPORTER'S USEPA LD. NO. TRANSPORTERS ELINOS EPA
0,0,0,1	DELIABLE LIGHTD CONTROL CODD	I IL ID   0   8   9   0   6   4   7   4   5   0   0   1   3   9   108   107   113
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		AVII DALE PRIPADES 1003

# ILEINOIS INVIRONMENTAL PROTECTION AGENCY LENERATOR ANNUAL HAZARDOUS WASTE REPORT

FORM.

842 964 690

	This re	pert is for t	he cakında	year ending	December	31, 19	84.		
	<del></del>	· ·	FOR AGE	NCY USE ONE	Y				
OR AGENCY USE	(LIPIHIMIC)	CARD TYPE	210	TRANS CODE	(A)	DA ENTE		1	<b></b>
				NSTRUCT					
REFER TO THE	SPECIFIC INSTRUCTOR The information re								
- Please print/t	ype with elite type	(12 chara	acters per	inch)					
I. NON-REGU	LATED STATUS								
year covered b	section only if you did no by this report. Circle the or explanation of codes, and	DE DAMININE C	ode (1 thru	Si that best d	ardous wasti iscribis you	e at any r status (	tene during	during the ent	the calendar ire year tice
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Small	Quantity Generato	r							
ह्या Exemp	pt								
• •	icial Use								
الِيًّا Close									
15	- ition's Non-Regulate	ed Status	is expect	ed to appl	v:				
	984 only, explain in		-		7-				
16			_	•					
16	inently, explain in C								
(B) Other	, explain in Comme	nt Section	J.						
II. RÉGULATED	) STATUS								
	ions for completing	•	•						
III. CENERATO	R'S USEPA I.D. NUN	<b>ABER</b>		ierator's				BER	
ifiribioi	61914191612141	<u>B</u> )	<u> </u>	1413181	0 2 0 0	0 4	}		
V. NAME OF I	NSTALLATION								
HANNAH M	ARINE CORPORAT	CION, SI	HIPYARD	DIVISIO	NC				
VI. INSTALLAT	ION MAILING ADD	RESS							
361 FRON	TAGE ROAD, SUI	TE 101							
Street or P.O. Box	x								
BURR RID	GE					IL	605	521	
City or Town						State	Z	p Cod	ke .
	OF INSTALLATION		ent than	section VI	above)				
	D 107TH STREET	· 							
Street or Route n	umber					n.	604	130	
LEMONT				<del></del>					
	TION CONTACT					State	<b>Z</b> 1	p Cod	r
	<del></del>							-	
,	_								<del>-</del>
(312) 25	7-5457								5
This Agency is a 1021 (1821 Disc	outhorized to require this information on the up to 51.	is required. F	ailure to do	so may resul	t macwill	bearity.	up to	\$25.00	XI for each
IX. CERTIFICAT									
I certify under plattached dixiume believe that the	chalty of law that I have ents, and that based on it submitted information is to including the possibility of	ny inquiry of ue, accurate a	those indivi ind complete	seporari dest	cty icspunul	ble for a	AX94A	R the i	autoimenour
George	Votava, Mgr.,	Shinva	rd Dive	£1-1.2	er li	2-15	-		2-26-85
Print/Type N		- Sith A	Signature	of Authorized	Regresentati	VC.			Dair Swined

# ILLINOIS ENVIRONMENTAL PROTECTION AGENCY GENERATOR ANNUAL HAZARDOUS WASTE REPORT This report is for the calendar year ending December 31, 1984. (cont.)

				FOR AC	INCY USE	ONLY					
FOR A	GENCY USE	LIPIHIWIC)	CARD TYPE	5 0	TRAI	NS A	DA ENTE		با الله	<b>-</b>	J
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· [][].	D <u>[</u> 01 61 91 4	11 91 61 21 41 8	L <u>Q</u> 1	<u>4) 31 BI</u>	01.21.0	<u> 101 01 4</u> 1			IIIIDIOIO	1016101	8 <u>141711</u>
XIII. FACILIT	TY'S ILLINOIS	EPA I.D. NO.	XIV. FACIL	ITY'S NA	ME / A	ADDRESS				•	
<u>[0 3 1 </u>	eaaa	191	Name	СНЕ	M CLE	EAR			Phone i	312 ,64	6 -6202
XV. WASTE	E IDENTIFICA	TION	Street (F	118 P.O. Box)	00 s.	STONY	ISLAN	D (	CHICAGO	IL State	6061 Zp
A. LINE	В.	DESCRIPTION WASTE	OF		C. USDOT Hatard Cride	W	HAZARDI ASTE NO. nstructio	.	E. AMOUNT OF		F. DENSITY (lbs. / gal.)
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0101017	<del>.</del>				67 68	111	73	76 		93	94 96
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0101110					67 68	7 80		76	<u>                                     </u>		<b>36</b>

#### ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

## GENERATOR ANNUAL HAZARDOUS WASTE REPORT This report is for calendar year ending December 31, 1984 (cont.)

VIVI DACE NII IN ARED

. A	GENCY USE	LIPIHIWICI	CARD TYPE	FOR AGEN	CY USE ONLY TRANS CODE	<b>^</b>	DATE LIVILIVILE ENTERED 9	14
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[] L  D	- DFDI 61 9: 41 9	9 61 21 41 B	10141	31 81 01 2		4		
V.NI. GEN	ERATOR'S NA	ME/ADDRESS						
Name	HANNAH MA	ARINE CORPORA	TION, SH	PYARD	DIVISIO	N	Phone (312 ) 257.5	3457
<u></u>	PT. 83 £	107TH STREET				LEMONT		60439
Street (P.C		TOTTI STREET	<del></del>		City	<u> </u>	State	Zip
		RTATION SERVIC	ES (HAULER	(S) USED:			I.o.	
A. LINE NO.	B.		PORTER'S NA ADDRESS	ME /			C TRANSPORTER'S USEPA I.D. NO.	D. TRANSPORTIES ELINOIS EPA LD NO
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0101012							I, L, D, O, 8, O, 7, 9, 4, 9, 6,	0 0, 3, 4, 8
0.0.0.3		TANK CLEANE	RS		<del></del>	<del></del>	IILIDIOI 61 21 41 81 91 81 21	8 O <sub>1</sub> O <sub>1</sub> 2 <sub>1</sub> 3
0 <sub>1</sub> 0 <sub>1</sub> 0 <sub>1</sub> 3	VIKING A	ASSOCIATES					95	06 107 113
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# GENERATOR ANNUAL HAZARDOUS WASTE REPORT This report is for the calendar year ending December 31, 1983.

|--|

FOR AGENCY USE ONLY					
OR AGENCY USE LIPIHIWICI CARD [2]01 TRANS [A] 1 5 TYPE 6 7 CODE 6	DA ENTE	TE L	11/	/	14
GENERAL INSTRUCTIONS  REFER TO THE SPECIFIC INSTRUCTIONS CONTAINED IN THIS BOOKLE  The information requested in this report is required by I					S FORM
Please print/type with elite type (12 characters per inch)			-		
I NON-REGULATED STATUS					
Complete this section <u>unly</u> if you did not generate regulated quantities of hazardous was year covered by this report. Circle the one numeric code (1 thru 5) that best describes you instructions for explanation of codes), and explain in Comment Section.	sie at any ur status	time du during the	ring the co	alendar ar (see	
11 Non-handler					
Small Quantity Generator					
L31 Exempt					
L4J Beneficial Use					
اِجِيّا Closed					
This installation's Non-Regulated Status is expected to apply:		•			
LEJ For 1983 only, explain in Comment Section.					
LZJ Permanently, explain in Comment Section.					
16 L81 Other, explain in Comment Section.					
II. REGULATED STATUS					
II. KEGOLATED STATOS					
See instructions for completing this and following sections					
See instructions for completing this and following sections.  III. GENERATOR'S USEPA LD. NUMBER  IV. GENERATOR'S ILLINOI:	S ID. N	IL JMBF	R		
III. GENERATOR'S USEPA I.D. NUMBER IV. GENERATOR'S ILLINOIS			R		
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III. CENERATOR'S USEPA I.D. NUMBER  LIILIDIO1619141916121418J  V. NAME OF INSTALLATION  HANNAH MARINE CORPORATION SHIPYARD DIVISION  VI. INSTALLATION MAILING ADDRESS  361 FRONTAGE ROAD, SUITE 101  Street or P.O. Box  BURR RIDGE  City or Town	1, 1,	6052			
III. GENERATOR'S USEPA I.D. NUMBER  IV. CENERATOR'S ILLINOIS  LILLIDIO16191419161214181  V. NAME OF INSTALLATION  HANNAH MARINE CORPORATION SHIPYARD DIVISION  VI. INSTALLATION MAILING ADDRESS  361 FRONTAGE ROAD, SUITE 101  Street or P.O. Box  BURR RIDGE  City or Town  VII. LOCATION OF INSTALLATION (if different than section VI above)	IL	6052	_	•	-
III. GENERATOR'S USEPA I.D. NUMBER  LILLIDIO 16 19 14 19 16 12 14 18 1 10 3 1 1 1 6 2 0 0  V. NAME OF INSTALLATION  HANNAH MARINE CORPORATION SHIPYARD DIVISION  VI. INSTALLATION MAILING ADDRESS  361 FRONTAGE ROAD, SUITE 101  Street or P.O. Box  BURR RIDGE  City or Town  VIL LOCATION OF INSTALLATION (if different than section VI above)  RT 83 AND 107TH STREET	IL	6052	_		
III. GENERATOR'S USEPA I.D. NUMBER  IV. CENERATOR'S ILLINOIS  LILLIDIO16191419161214181  V. NAME OF INSTALLATION  HANNAH MARINE CORPORATION SHIPYARD DIVISION  VI. INSTALLATION MAILING ADDRESS  361 FRONTAGE ROAD, SUITE 101  Street or P.O. Box  BURR RIDGE  City or Town  VII. LOCATION OF INSTALLATION (if different than section VI above)  RT 83 AND 107TH STREET  Street or Route number	IL State	6052 Zip		•	
III. GENERATOR'S USEPA I.D. NUMBER  IV. CENERATOR'S ILLINOIS  LILLIDIO 6 19 14 19 16 12 14 18 1 19 3 19 19  V. NAME OF INSTALLATION  HANNAH MARINE CORPORATION SHIPYARD DIVISION  VI. INSTALLATION MAILING ADDRESS  361 FRONTAGE ROAD, SUITE 101  Street or P.O. Box  BURR RIDGE  City or Town  VII. LOCATION OF INSTALLATION (if different than section VI above)  RT 83 AND 107TH STREET  Street or Route number  LEMONT	IL State	6052 Zp			
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III. GENERATOR'S USEPA I.D. NUMBER  IV. CENERATOR'S ILLINO!!  LILLIDIO1619141916121418J  V. NAME OF INSTALLATION  HANNAH MARINE CORPORATION SHIPYARD DIVISION  VI. INSTALLATION MAILING ADDRESS  361 FRONTAGE ROAD, SUITE 101  Street or P.O. Box  BURR RIDGE  City or Town  VII. LOCATION OF INSTALLATION (if different than section VI above)  RT 83 AND 107TH STREET  Street or Route number  LEMONT  City or Town  VIII. INSTALLATION CONTACT  — WILSON, WILLIAM W.  Name (last and first)	IL State	6052 Zp			
III. GENERATOR'S USEPA I.D. NUMBER  LILLIDIO1619141916121418J  V. NAME OF INSTALLATION  HANNAH MARINE CORPORATION SHIPYARD DIVISION  VI. INSTALLATION MAILING ADDRESS  361 FRONTAGE ROAD, SUITE 101  Street or P.O. Box  BURR RIDGE  City or Town  VII. LOCATION OF INSTALLATION (if different than section VI above)  RT 83 AND 107TH STREET  Street or Route number  LEMONT  City or Town  VIII. INSTALLATION CONTACT  WILSON, WILLIAM W.  Name (last and first)  312-257-5457  Phone No. (area code & no.)	IL State	6052 Zip	Code  Code		
III. CENERATOR'S USEPA I.D. NUMBER  (I]LIDIO1619141916121418J  V. NAME OF INSTALLATION  HANNAH MARINE CORPORATION SHIPYARD DIVISION  VI. INSTALLATION MAILING ADDRESS  361 FRONTAGE ROAD, SUITE 101  Street or P.O. Box  BURR RIDGE  City or Town  VII. LOCATION OF INSTALLATION (if different than section VI above)  RT 83 AND 107TH STREET  Street or Route number  LEMONT  City or Town  VIII. INSTALLATION CONTACT  WILSON, WILLIAM W.  Name (last and first)  312-257-5457	IL State  Chapter #	6052 Zip	Code Code Code	each	

attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information. Thelieve that the submitted information is true, accurate and complete. Lam aware that there are significant penalties for submitting false information, including the possibility of fine and impresonment.

WILLIAM W. WILSON	VP & GEN.	MGR. William In labor	2-24-84
Print Type Name	Title	Signature of Authorized Representative	Date Signed

# ILLINOIS ENVIRONMENTAL PROTECTION AGENCY GENERATOR ANNUAL HAZARDOUS WASTE REPORT

This report is for the calendar year ending December 31, 1983.

(cont.)

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FOR AGENCY USE LLIPIHI			IS (A)	DATE ENTERED	، ليا	/ L.L. / L.L.	<u>,</u>
X. GENERATOR'S USEPA I.D. NO.	XI. GENERATOR	'S ILLINO	IS EPA I.D.	NO X	II. FAĞUTY	"S USEPA I.D. 1	<b>VO</b> .
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XIII. FACILITY'S ILLINOIS EPA I.D. N	O. XIV. FACILITY'S N	AME / A	DDRESS			1	
10131/161016151/1	Name Hann	ah Ma	leur <del>rine C</del>	<del>orbora</del>	tion	3/ス G Phone ( <del>312 , 2</del>	,46-6 2, <del>57-545</del>
53 60	//8'00 . Rt. 83	S. Str.	neg Ock	are, (	hecogo		60439
XV. WASTE IDENTIFICATION	Sticet (P.O. Box)	<u>&amp;</u>	tn st.	, Lemo	nty	IL State	
A B.		55	D. RCRA HA	ZARDOUS	E.		F.
	PTION OF PASTE	C USDOT Hazard Code	WAS (see in:	TE NO. structions)		NT OF WASTE	DENSITY (lbs. / gal.
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# GENERATOR ANNUAL HAZARDOUS WASTE REPORT 60 (Cont.)

FOR AGENCY USE ONLY	
FOR AGENCY USE (LIP HIWIC) CARD (610) TRANS (A)	DATE     /     /       ENTERED 9 14
X. GENERATOR'S USEPA I.D. NO. XI. GENERATOR'S ILLINOIS EPA I.D. NO.	
1 L D 0 6 9 4 9 6 2 4 8 [0   3   1   1   6   2   0   0   1   1   1   G	
V.NIGENERATOR'S NAME/ADDRESS	
Name Hannah Marine Corporation	Phone ( 312 257-5457
Rt. 83 & 107th Street Lemont Sircel (P.O. Box) City	IL 60439 State Zip
XVIII. LIST OF TRANSPORTATION SERVICES (HAULERS) USED:	
A. LINE NO. TRANSPORTER'S NAME / ADDRESS	TRANSPORTER'S USEPA I.D. NO.
	עם פו
0 0 0 1 RELIABLE LIQUID CONTROL CORPORATION	T. D. D. 8 19 10 16 14 17 14 15 0 10 1 1
0 0 0 2 11 44 CHICAGO TANK CLEANERS	I L D 0 8 0 17 19 14 19 16 10 0 13 14
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41 44	45 56 57
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41 44	45 56 57
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41 44	45 36 57
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### ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

## GENERATOR ANNUAL HAZARDOUS WASTE REPORT

This report is for the calendar year ending December 31, 1982.

**GENERAL INSTRUCTIONS** 

REFER TO THE SPECIFIC INSTRUCTIONS CONTAINED IN THIS BOOKLET BEFORE COMPLETING THIS FORM.

The information requested in this report is required by Federal and State law.

-	•
Please print/type with elite type (12 characters pe	er inch)
I. GENERATOR'S USEPA I.D. NUMBER	I.A. GENERATOR'S ILLINOIS I.D. NUMBER
1LD0694 96248	03116200116
II. NAME OF INSTALLATION	
HANNAH MARINE CORP	·
III. INSTALLATION MAILING ADDRESS	
Street or P.O. Box  LEDTINE  City or Town	RD at Archer Ave
LEUZUNT	JL 60-139
City or Town	State Zip Code
IV. LOCATION OF INSTALLATION (if different tha	n section III above)
Street or Route number	· · · · · · · · · · · · · · · · · · ·
City or Town	State Zip Code
V. INSTALLATION CONTACT	State Zip Code
•	State Zip Code
V, INSTALLATION CONTACT	State Zip Code
V, INSTALLATION CONTACT	State Zip Code
V. INSTALLATION CONTACT  Name (last and first)	State Zip Code
V. INSTALLATION CONTACT  Name (last and first)  3/2 257 5457  Phone No. (area code & no.)  This Agency is authorized to require this information un	ider Illinois Revised Statutes, 1981, Chapter III-1 2. Sections
V. INSTALLATION CONTACT  Name (last and first)  3/2 257 5457  Phone No. (area code & no.)  This Agency is authorized to require this information on 1004 and 1021 (fX2). Disclosure of this information is respectively.	ider Illinois Revised Statutes, 1981, Chapter III-1 2. Sections
V. INSTALLATION CONTACT  Name (last and first)  3/2 257 5457  Phone No. (area code & no.)  This Agency is authorized to require this information on 1004 and 1021 (fl/2). Disclosure of this information is respectively sold of search day the failure continues, a fine up to September approved by the Forms Management Center.  VII. CERTIFICATION  I certify under penalty of law that I have personally examined all attached documents, and that based on my inquired.	oder Illinois Revised Statutes, 1981, Chapter III-1 2, Sections equired failure to do so may result in a civil penalty up to 1,000,000.00 and imprisonment up to 5 years. This form has a civil penalty up to 1,000,000.00 and imprisonment up to 5 years. This form has a civil penalty of this form this increase and the submitted in this post those individuals immediately responsible for obtaining in its true, as curate, and complete 1 am aware that there are
Name (last and first)  3/2 257 5457  Phone No. (area code & no.)  This Agency is authorized to require this information on 1004 and 1021 (fl/2). Disclosure of this information is re 525,000 for each day the failure continues, a fine up to S been approved by the Forms Management Center.  VII. CERTIFICATION  I certify under penalty of law that I have personally exame and all attached documents, and that based on my inquire the information. I believe that the submitted information significant penalties for submitting false information, inclination.	oder Illinois Revised Statutes, 1981, Chapter III-1 2. Sections equired failure to do so may result in a civil penalty up to 1,000,000.00 and imprisonment up to 5 years. This form has a civil penalty up to 1,000,000.00 and imprisonment up to 5 years. This form has a civil penalty of this form this possible for obtaining in its true, as curate, and complete 1 am aware that there are
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## GENERATOR ANNUAL HAZARDOUS TA ASTERLIPORT (1994)

This report is for the calendar year ending December 31/1982

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## GENER GOR AGNUAL HAZARDOUS WASTE REPORT CORE

This report is for the calendar year ending December 31, 1982

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## GENERATOR ANNUAL HAZARDOUS WASTE REPORT AND

This report is for the calendar year ending December 31, 1982

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RESPONSE NO. 7

# HANNAH MARINE CORPORATION SHIPYARD DIVISION

TANK BARGE CLEANING PROCEDURE

FOR

CHANGE OF CARGO

GASOLINE (PETROL)

USCG SUB-CHAPTER (D)

JULY 3, 1984

#### GENERAL

The intent of this procedure is to, in writing, re-establish guides, standards and other criteria pertinent in cleaning liquid tank barges for change of cargo containing Gasoline bottoms. It should be understood that cleaning practices can vary from this procedure due to type and condition of barge, reloading requirements that might be dictated by the customer.

The implementation of this procedure is not intended as a substitute for independent judgement, but only as a guide for satisfactory results. Variables may exist on some cleanings such as single skinned hulls, resulting in internal cargo tank framing, type and location of steam coils, amount and condition of bottoms, all can be contributing factors as far as methods and costs.

#### 1.0 <u>Information Requirements</u>

- a. The following information is essential for change of cargo cleanings.
  - b. Type of barge, single or double skinned.
  - c. Number of cargo compartments, coated or uncoated.
  - d. Existing bottoms, next product to load.
- e. If possible, when was the barge last cleaned, is the barge frequently cleaned between loadings.

#### 1.1 Inspection Prior to Cleaning

- a. Inspect all compartments with the appropriate safety meter for a safe-to-enter status, check for level of water in all void compartments.
- b. Open all cargo hatches, butterworth and ullage openings, inspect from topside amount and condition of bottoms, location of pipelines, suction bells, and/or sumps for ballasting purposes.
- c. During this inspection, make note of rust buildup in cargo compartments. This could be the determining
  factor if a backflush of header and pipelines will be
  necessary.

  133

#### 1.2 Cargo Tank Washing

- a. Ballast barge fore or aft, depending on sump location.
- b. Install butterworth spinners approximately six feet down from tank top, connect vacuum line to the vessel's discharge header, start vessel's pump engine, engage pump as booster to dock vacuum pump. Spin each compartment for about seven minutes with water temperature between 90° to 110°.
- c. Upon completing the spinning of the compartment, install forced air blowers in the cargo tank manway hatch and butterworths, blow compartment until gas free, safe for entry, see Section 1.4, Paragraph (a).
- d. Upon assurance of safe entry, enter compartment, if heavy concentrations of rust or scale are in evidence, hand wash walls, pipelines and floors of rust or scale to sump area and remove by bucketing from compartment. Hand wash walls and floors with high pressure hose to remove balance of rust and/or rust residue left from the first rust removal operation. It is noteworthy to add that infrequent washing between cargoes of gasolines will, in most cases, leave heavy concentrations of rust and rust residue from five to ten inches on areas of compartment floors, depending on condition of shore tanks, etc.

#### 1.3 Backflush of Pipeline System

- a. If there is a heavy concentration of rust or scale on the compartment floors, it is safe to assume even after spinning through the header system, that there is an excessive amount of rust left in the pipelines and header. It is essential that this rust and/or residue be removed to prevent the possibility of contamination to the next cargo.
  - b. Backflushing consists of installing a 1-1/2" line

#### 1.3 Backflush of Pipeline System (Cont'd)

from the dock wash pump to the vessel's discharge header, place last cargo valve from the header in the open position and flush system at 90 to 100 pounds water pressure for at least ten minutes, depending on the amount of residue that might exist in the lines. To be assured that all rust and/or residue is removed, inspect the suction bells in each compartment. If the water coming from the bells is free of rust or residue, it can be assumed that the pipelines are free of contamination that might be harmful to the next product.

- c. Upon being assured that the pipelines are free of rust, re-rinse compartment floors, remove any remaining rust from sumps and surrounding areas and force air blow compartment walls and floors dry.
- d. When the barge is blown dry, install header blinds (4) bolts each blind, reinstall pump cleanout blind with gasket and bolts. Cleanout blind must be tight to prevent the cleanout from sucking air during pump off. Close up barge, dog down all hatches, butterworths and ullage openings, etc. Fuel up pump engine if required.

#### 1.4 Characteristics and Safety

- a. As noted on the attached chemical data sheet, gasoline does present an inhalation health hazard. Maintain blowers and force air blow compartments, checking level of oxygen and odor threshold (ppm) ppm maximum acceptance level prior to and during entry. Due to the safety characteristics, no personnel shall be allowed to enter any compartment if the lower explosion level exceeds (5) percent and the oxygen level is below (20) percent.
- b. Gasoline (Petrol)  $C_5H_{12}$  to  $C_9H_{20}$  is a mixture of volatile hydrocarbon containing straight chain and branched chain paraffine, naphthenes and aromatic hydrocarbon such as

## 1.4 Characteristics and Safety (Cont'd)

A-Heptane, Iso-octane, Methyl Cyciohexane, Benzene and Toluene, Alcohol and other combustibles are also present in some special gasolines.

Synonyms—Petrol	United Nations Number	. 1023
	CHRIS Code	.GAT
Formula-C5H12 to C9H20	Boiling Point	140 to 390_0F
Appearance-Odor Colorless to straw white liquid; sweet,	Vapor Pressure 20°C (68°F) (mmHg)	190
Specific Gravity-0.72 · 0.76	Reid Vapor Pressure (psia)	7.4
Chemical Family-Hydrocarbons	Vapor Pressure 46°C (115°F) (psia). Vapor Density (Air = 1.0)	
Applicable Bulk Regulations 46 CFR Subchapter	Solubility in Water Neoligible	

#### FIRE & EXPLOSION HAZARD DATA

Grade-C: Flammable liquid Electrical Group-0

General-Dangerous fire and explosion hazard in presence of heat or flame.

Flash Point (°F)..... Flammable Limits ..... 1.4 - 7.6% Autoignition Temp. (OF).... 495

Extinguishing Agents.....

Extinguishing Agents..... CO<sub>2</sub>, dry chemical, foam, water fog

Special Fire Procedures..... Tanks exposed to fire should be kept cool with a water spray.

#### HEALTH HAZARD DATA

Health Hazard Ratings Odor Threshold (ppm)

TLV (ppm) 500-1000

General-Liquid irritating to skin and eyes on contact. Vapor inhalation leads to intoxication.

Symptoms-Inhalation: Marked vertigo, inability to walk a straight line, hilarity, incoordination intense burning in throat and lungs, possibly bronchopneumonia, nausea, vomiting,

"Short Exposure Tolerance-0.5 to 1.6% vapor concentration was fatal to a man after 5 minutes exposure; 500 to 30,000 ppm was fatal to a youth.

Exposure Procedures—Inhalation: Immediately remove victim from contaminated atmosphere. If breathing is interrupted. artificial respiration should be applied immediately. A physician should be called.

#### REACTIVITY DATA

Stability-Chemically stable.

Compatibility-Meterial: Almost any usual meterial of construction is suitable. Natural nubber is softened and will deteriorate repidly.

Cargo: Group 33 of compatibility chart.

#### SPILL OR LEAK PROCEDURE

Waser polyestrylene gloves, face shield, protective clothing. Have all-purpose canister mask againstic. Secure ignition sources. Small smills may be flushed every with water. sources. Small spills may be flushed away with water.

If a spill occurs, call the National Response Center 800-424-8802.

## HANNAH MARINE CORPORATION SHIPYARD DIVISION

FOR

CHANGE OF CARGO

THREE AND SIX COMPARTMENTS

195' X 35' X 12'

TALLOW AND BEAN OILS

U.S.C.G. SUB-CHAPTER (D)

JUNE 12, 1984

#### GENERAL

The intent of this procedure is to, in writing, re-establish guides, standards and other criteria pertinent in cleaning liquid tank barges for change of cargo with Tallow and/or Bean Oil bottoms. It should be understood that in some cases, cleaning practices may vary from this procedure due to type and condition of barge and reloading requirements that might be dictated by the customer.

The implementation of this procedure is r t intended as a substitute for independent judgement, but only as a guide to achieve satisfactory results. Variables may exist on some cleanings such as single skinned hulls resulting in internal cargo tank framing, type and location of steam coils and ambient temperatures, all can contribute to cleaning methods and costs.

#### 1.0 Information Requirements

- (a) The following information is essential in achieving favorable results on change of cargo cleanings.
  - (b) Type of barge, single or double skinned.
  - (c) Number of cargo compartments, lined or unlined.
- (d) Type of existing bottoms and product to be reloaded.
- (e) If possible, when was the last cleaning, is the barge frequently cleaned between loadings.

### 1.1 Inspection Prior to Cleaning

- (a) Inspect all void and cargo compartments with the appropriate safety meter for a safe-to-enter status, included in this inspection, check water level in all void compartments.
- (b) Open up all cargo hatches, butterworths, and ullage openings, inspect from topside the amount and conditions of bottoms, location of pipelines, suction bells, and/or sumps for ballasting purposes.

#### 1.1 Inspection Prior to Cleaning (Cont'd)

(c) During this preliminary inspection, make note of compartment residue, setup bottoms on walls, floors and pipelines, also, if steaming or backflushing is necessary.

#### 1.2 Cargo Tank Washing

- (a) Ballast barge fore or aft, depending on location of sumps.
- (b) If the ambient temperature is such to cause setup bottoms, steam compartments and headers until bottoms are in a liquified condition. Strip pure product left in barge to suitable storage drums for reclamation. Install butterworth spinners approximately three feet down from tank top, connect vacuum line to vessel's discharge header, start vessel's pump engine, engage pump as booster to dock vacuum pump and as a means to clean vessel's cargo pump of product. Spin each compartment for about 15 minutes with water temperature between 150° to 200°.
- (c) After spinning the compartment, install forced air blowers in the compartment's manway and butterworth hatches, blow until gas free, safe for men to enter, see Paragraph 1.4 Characteristics and Safety.
- (d) When the tank is proven safe for men to enter, hand wash all remaining product or product residue from walls, floors and pipelines by means of a high pressure hose and water temperature at about 130°. Remove cleanout blinds, open cargo valves, and drain remaining water diluted product from pipelines into cargo tanks, if an accumulation of product is in evidence upon dropping the headers, backflushing the pipeline system shall be required to prevent contamination of the next product to be loaded in the barge.

#### 1.3 Backflushing Pipeline System

- (a) If there is an accumulation of product in evidence in the pipeline after dropping the headers, it is safe to assume even after spinning through the header system that there is product left in the pipeline system. It is essential that this be removed to prevent any possibility of contamination to the next product to load that might be unrelated to Tallow and/or Bean Oils.
- (b) Backflushing consists of installing a 1-1/2" line from the dock wash pump to the vessel's discharge header flange, place last cargo valve and/or loadline valve from the header in the open position and flush system at 110 pounds of water pressure, with water at 130° for about 15 minutes, depending upon the amount of product or product residue that might still exist in the lines. To be assured that all product is removed, inspect the suction bells in each compartment, if the water is clear and free of residue coming from the suction bells, it can be assumed that the pipelines are free of any contaminations that might be harmful to the next product. It should be noted that due to product characteristics and washing through the headers will in some cases eliminate the need to backflush every barge that will clean for change of cargo.
- (c) Upon being assured that the pipelines are free of product or product residue, remove product and/or residue from sump areas, re-rinse and squeegee compartment floors, force air blow compartment walls and floors dry.
- (d) Upon completion of washing, install blind flanges with gaskets, four bolts each, blind on headers, also install blind flange on cleanout with gaskets and bolts. Cleanout flange must be tight to prevent the cleanout from sucking air during pump off. Close up barge, dog down all hatches, butterworths and ullage openings, etc., fuel up pump engine if required.

#### 1.4 Characteristics and Safety

(a) As noted in the attached chemical data sheet, tallow and bean oils do not present an inhalation health hazard, but because of unknown prior cargoes, as a margin of safety, install blowers and force air blow compartments for at least one hour prior to entry.

#### 1.5 Waste Water Generated

- (a) Method of cleaning will dictate the amount of waste water generated to clean for change of cargo.
- (b) Cleaning from tallow and/or bean oils to an unrelated next product will average about 13,000 gallons of waste water requiring disposal.

#### 1.6 Cost of Cleaning

(a) The cleaning cost to clean from Tallow and Bean Oils will average about \$2,375.56 per barge.

	····	
Synonyms—Chinese bean oil, soyabean oil, soy oil	United Nations Number	<b>~</b>
Formula-Mixture	Boiling PointYery high OC Freezing Point20 OC -4	2 <b>7</b>
Appearance-Odor-Pale yellow liquid; weak odor	•	
Specific Gravity-0.92 : 0.93	Vapor Pressure 20°C (68°F) (mmHg) 2.04 Reid Vapor Pressure (psia)	_
Chemical Family-Esters	Vapor Pressure 46°C (115°F) (psia). 0.18 Vapor Density (Air = 1.0)	_
Applicable Bulk Regulations 46 CFR SubchapterD	Solubility in Water Sight	
		-

T POXEEVN OIL

#### FIRE & EXPLOSION HAZARD DATA

Grade-E: Combustible liquid

Electrical Group-D

General-Slight fire hazard when exposed to heat or flame

Flash Point (°F)..... 540

Flammable Limits ..... Unavailable

Autoignition Temp. (°F)..... 833

Extinguishing Agents..... Dry chemical, foam or carbon dioxide

Special Fire Procedures ..... Water may be ineffective on fire. Cool exposed containers with water.

### HEALTH HAZARD DATA

Health Hazard Ratings
Unavailable

Odor Threshold (ppm)
Not pertinent

TLV (ppm)
Not pertinent

General-Not harmful.

Symptoms-None

Short Exposure Tolerance-Does not penetrate skin in harmful amounts.

Exposure Procedures-None

#### REACTIVITY DATA

Stability-Stable. Soluble in alcohol, ether, chloroform and carbon disulfide.

Compatibility-Materials: Will soften some paints and rubber. Has no action on steel.

Cargo: Group 20 of compatibility chart.

### SPILL OR LEAK PROCEDURE

Wear rubber gloves, face shield and laboratory cost. Secure all ignition sources.

If a spill occurs, call the National Response Center 800-424-8802

Synonyms -Ed Statisticia, Incolosa utlow, tallow oil	United Nations Number
Formula—Fats containing C <sub>16</sub> to C <sub>18</sub> Appearance-Odor—Dark yellow liquid with a waxy odor  Specific Gravity—0.85 · 0.89 © 70°C  Chemical Family—Esters  Applicable Bulk Regulations 46 CFR Subchapter	Boiling Point
FIRE & EXPLOSION H	AZARD DATA
Grade-D: Combustible liquid Electrical Group-D	•
. General—Slight fire hazard when exposed to heat or flame	
Flash Point (°F)	emical sol exposed containers with water.
HEALTH HAZAR	D DATA
Health Hazard Ratings Odor Threshold ( Not pertinent Unavailable General-Non-toxic	(ppm) TLV (ppm) Not pertinent
Symptoms—Non-toxic	
*Short Exposure Tolerance—Hot liquid can burn eyes and skin	•
Exposure Procedures—Treat burns caused by hot liquid	· •
	DATA
REACTIVITY Stability—Stable	DAIA

### SPILL OR LEAK PROCEDURE

Wear rubber gloves, face shield and Isborstory coet.

Compatibility-Cargo: Group 34 of compatibility chart.

144

If a spill occurs, call the National Response Center 800-424-8802.

## HANNAH MARINE CORPORATION SHIPYARD DIVISION

FOR
CHANGE OF CARGO
ON
THREE AND SIX COMPARTMENT BARGES
195' X 35' X 12'

U.S.C.G. SUBCHAPTER (1)
MOLASSES

JUNE 11, 1984

#### GENERAL

The intent of this procedure is to, in writing, re-establish guides, standards and other criteria pertinent in the cleaning of liquid tank barges for change of cargoes with molasses bottoms. It should be understood that cleaning practices can vary from this procedure depending on condition of bottoms and reload requirements that may be dictated by the customer.

The implementation of this procedure is not intended as a substitute for independent judgement, but only as a guide to aid in assurance of satisfactory results. Variables may exist on some cleanings such as single skinned hulls resulting in internal cargo tank framing, type and location of steam coils, and ambient temperatures, all can contribute to cleaning methods and costs.

#### 1.0 Information Requirements

- (a) The following information is essential in achieving favorable results on change of cargo cleanings.
  - (b) Type of barge, single or double skinned.
  - (c) Number of cargo compartments, lined or unlined.
- (d) Type of existing bottoms, product to be reloaded.
- (e) If possible, when was the last cleaning of the barge, is the barge frequently cleaned between loadings.

### 1.1 Inspection Prior to Cleaning

- (a) Inspect all compartments with an appropriate safety meter for a safe-to-enter status, check for level of water in all void compartments.
- (b) Open up all cargo hatches, butterworths and ullage openings, inspect from topside the amount and condition of bottoms, location of pipelines, suction bells, and/or sumps for ballasting purposes.
- (c) During this preliminary inspection, make note of compartment residue, setup or burnt molasses on walls and

1.1 Inspection Prior to Cleaning (Cont'd)

pipelines, also, if steaming or backflushing is necessary.

#### 1.2 Cargo Tank Washing

- (a) Ballast barge fore or aft, depending on location of sumps.
- (b) If the ambient temperature is such to cause setup bottoms, steam compartments and headers until molasses is in a liquified condition. Install butterworth spinners approximately four feet down from tank top, connect vacuum line to vessel's discharge header, start vessel's pump engine, engage pump as booster to dock vacuum pump and as a means to clean vessel pump of product. Spin each compartment for about 12 minutes. If the ambient temperature is above 30°, wash water temperature should be 90°. If below 30°, wash water should be 120°.
- (c) After spinning the compartment, install forced air blowers in the compartment's manway and butterworth hatches, blow until gas free, safe for men to enter, see Paragraph 1.3 Characteristics and Safety.
- (d) When the tank is safe to enter, hand wash all remaining molasses from walls and floors by means of a high pressure hose with water temperature at 110°. Remove clean-out blinds, open cargo valves and drain remaining water diluted molasses from pipelines into cargo tanks.
- (e) Due to the characteristics and compatibility of molasses, it is common practice to load this product on top of other bottoms such as tallows and bean oils, and also due to the necessity to steam prior to unloading, can both be cause for problems tembe encountered in the cleaning operation. For example, if during the course of product steaming the temperature exceeds 120° for any length of time, can result in molasses or molasses residue to be baked and/or

### 1.2 Cargo Tank Washing (Cont'd)

burnt on walls, floors, and pipelines, requiring extensive hand scraping and wire brushing for removal. If the molasses was loaded on top of an unrelated product, the removal of both can change the method of cleaning the barge.

- (f) Upon being assured that all pipelines, walls, and floors are free of molasses and molasses residue, hand wash walls and pipelines in compartments, squeegee floors and force air blow compartment walls and floors dry.
- (g) Upon completion of washing, install blind flanges with gaskets, four bolts on each blind, also install blind flange on cleanout with gaskets and bolts. Cleanout flange must be tight to prevent the cleanout from sucking air during pump off. Close up barge, dog down all hatches, butterworths and ullage openings, etc., fuel up pump engine if required.

#### 1.3 Characteristics and Safety

(a) Fermentation occurs when molasses is diluted with salt or fresh water and is accelerated by heat. During fermentation, CO<sub>2</sub> (with possible traces of ethanol and higher alcohol vapor) is given off, which will produce inhalation hazard in compartments containing molasses residue. It is noteworthy to add that molasses or molasses residue will absorb all oxygen in the cargo or void compartment and entry prior to checking oxygen level with an oxygen meter can result in death. As a margin of safety, blow all compartments two hours and check oxygen level prior to entry. A safe oxygen level shall not be less than 20 percent.

### 1.4 Waste Water Generated

(a) Condition of compartments and method of cleaning will dictate the amount of waste water generated to clean

### 1.4 Waste Water Generated (Cont'd)

for change of cargo.

(b) Cleaning from molasses to an related next product will average about 9,375 gallons of waste water requiring disposal.

#### 1.5 Cost of Cleaning Molasses

(a) The cost of cleaning from molasses to an unrelated next product will average about 2,830.80 per barge.

Sysonyms-Treets	United Nations Number	Unusgreet
•	CHRUS Code	
Formula -A mixture of nursus and nupra	Bailing Paint	
Appearance-Odor -Dark brown syrings liquid		
Specific Gravity-1.45	Vapor Pressure 20°C (68°F) (mmHg) Reid Vapor Pressure (peia)	L0-4
Chemical Family-Alcohola, Glycola and Glycol Ethers	Vapor Pressure 46°C (115°F) (peia). Vapor Density (Air = 1.0)	
Applicable Bulk Regulations 46 CFR Subchapter	Solubility in Water.	

Electrical Group-NA

General -Non-Remmable and non-combustable

Flammable Limits
Autognition Temp. (°F).... Non-flammable Non-Hammable Extinguishing Agents..... Non-flammable Special Fire Procedures ..... Non-Hammeble

#### HEALTH HAZARD DATA

Health Hazard Ratings Unevariable

Odor Threshold (ppm) Unavariable

TLV (ppm) Unevariable

General-Non sonie. Molesses fermentation occurs when molesses is diluted with selt or frush water and is acc hest. During formentation CO2 (with possible traces of otherol and higher alcohol vapor) is given off, which will produce whatever hezerd in comparament containing molecule revolution.

Symptoms-Non toxis

Short Exposure Tolerance -- Univallable

Exposure Procedures-Vapor-remove victim to fresh air. Skin or eye comuctaffected areas gondy with wome.

#### REACTIVITY DATA

Stability-Stable. Reacts with conc. nitric acid and conc. sulphuric acid. Forments when diluted with salt or fresh weter.

Compatibility-Meterial: Mild reel and trainless steel are suitable.

Corpo: Group 43 of companishity chart.

#### SPILL OR LEAK PROCEDURE

Which area with weter after removing bulk of spill by general means.

If a spill occurs, call the National Response Center 800-424-8802.

Remarks:

#### HANNAH MARINE CORPORATION

#### SHIPYARD DIVISION

TANK BARGE CLEANING PROCEDURE
FOR

CHANGE OF CARGO

STYRENE MONOMER INHIBITED
USCG SUB-CHAPTER (O)

JUNE 26, 1984

#### GENERAL

The intent of this procedure is to, in writing, re-establish guides, standards and other criteria pertinent in cleaning liquid tank barges for change of cargo containing Styrene bottoms. It should be understood that cleaning practices can vary from this procedure due to type and condition of barge, reloading requirements that might be dictated by the customer. The implementation of this procedure is not intended as a substitute for independent judgement, but only as a guide for satisfactory results. Variables may exist on some cleanings such as single skinned hulls, resulting in internal cargo tank framing, type and location of steam coils, amount and condition of bottoms all can be contributing factors in methods and costs.

#### 1.0 <u>Information Requirements</u>

- (a) The following information is essential on change of cargo cleanings.
  - (b) Type of barge, single or double skinned.
- (c) Number of cargo compartments, coated or uncoated.
  - (d) Existing bottoms, next product to load.
- (e) If possible, when was the last cleaning, is the barge frequently cleaned between loadings.

### 1.1 Inspection Prior to Cleaning

- (a) Inspect all compartments with the appropriate safety meter for a safe-to-enter status, check for level of water in all void compartments.
- (b) Open all cargo hatches, butterworth and ullage openings, inspect from topside amount and condition of bottoms, location of pipelines, suction bells, and/or sumps for ballasting purposes.
- (c) During this inspection, make note of any product polymerization, see Section 1.3 Paragraph (a).

### 1.2. Cargo Tank Cleaning (Strip and Blow)

- (a) The two most common methods of change of cargo cleanings are either water wash or a strip and blow. This procedure reflects the strip and blow method.
- (b) Ballast barge fore or aft, depending on location of sumps.
- (c) Due to the product's flash point and prior to cleaning, install ground cable from barge to dock to eliminate any possibility of a static explosion.
- (d) Strip vessel's pipelines of product through the stripping line using either portable or dock vacuum pump. From topside, strip pure product from cargo compartments by means of a 1-1/2" aluminum pipe equipped with brass fittings attached to vacuum hose, store pure product in suitable storage container for reclamation.
- (e) Install forced air blowers in the compartment's butterworth and manway hatches, blow until gas free, safe for men to enter, see Section 1.3.
- (f) Upon assurance that the compartment is in a safe to enter condition, open cargo and loadline valves, pump cleanout blind, drop header and strip any remaining product from lines, sumps and floors, including rust or scale of any consequence.
- (g) When barge is stripped product free, continue to force air blow until compartments are dry and odor free.
- (h) When barge is blown dry, install header blind flanges (4) bolts each blind flange, reinstall blind flange with gasket and bolts on pump cleanout. Cleanout blind must be tight to prevent the cleanout from sucking air during pump off. Close up barge, dog down all hatches, butterworths and ullage openings, etc., fuel up pump engine, if required.

# 1.3 Characteristics and Safety

- (a) Styrene Monomer C<sub>6</sub>H<sub>5</sub>CHCH<sub>2</sub> readily undergoes polymerization when heated or exposed to light or a peroxide catalyst, becomming increasingly viscous until a clear solid is produced. The polymerization releases heat and may become expolsive. Inhibitors such as Hydro-Quinone or Para-Tert-Butylcatechol, must be added to prevent polymerization during storage or shipping.
- (b) As noted on the attached chemical data sheet, Styrene does present an inhalation health hazard. Maintain blowers and force air blow compartments, checking level of oxygen and odor threshold (ppm), 100 ppm maximum acceptance level prior to and during entry.

# 1.4 Waste Water Generated

(a) Due to the fact a normal strip and blow does not require washing, no waste water is generated.

# 1.5 Cost of Cleaning

(a) The cost of cleaning from Styrene Monomer to an unrelated next product will average about \$900.00 per barge.

Systemy may be who have sense may process of the existence may styled a single force may	United Nations Number
Formula-CaNaCHCNa	Freezing Point 103 5C 20 4
Appraiance Odor Colories liquid, sores eder when pure; shorp d'apprealle seler when impure Specific Gravity -0.82	Vapor Pirmuit 20°C (65°F) (mmHg) 48.
Chemical Family-Movement  Applicable Bulk Regulations 46 CFR Subchapter	Vapor Pressure 46°C (115°F) (psia). 24 Vapor Denvity (Air = 1.0)

#### FIRE & EXPLOSION HAZARD DATA

Grade-D: Combasible liquid
Dectrical Group-D

General-Ignited by least and open flame. Fire or contamination may cause violent suprure of tank,

Extinguishing Agents ..... CO2, dry chemical, water log, from

Special Fire Procedures . . . . Provide body and respiratory protection for firefighting personnel. Tanks exposed to far should be kept cool with a mater spray.

#### HEALTH HAZARD DATA

Health Hazard Ratings

Odor Thirshold (rpm)
0.15

TLV (rym)

General-Vapor very initiating to eyes, mediciately initiating to respiratory tract with mediciate systemic effect. Liquid initiating to skip.

Symptoms - Viralines, dissiness, causes, and stepiness.

"Short Exposure Tolerance-10,000 pom may be faral in 30 to 60 minutes.

Exposuse Proceduses—Vapors—remove victim to firsh oir; If breathing stops, apply artificial sespiration. Skin or eye exposes—remove consuminated clothing and pently flush affected areas with water for 15 minutes. Soop, If available, should be used on affected at in areas. Get medical attention.

#### REACTIVITY DATA

Stability—Will readily form peroxides which catelype polymerization unless inhibited. Heat, light and strong acids also catalype polymerization reaction.\*

Compatibility—Material: Most materials of construction are suitable. Do not use copper or he alloys. Styrene can be polymerized at explosive rates by certain contaminants.

Corpo: Group 30 of compatibility chark

#### SPILL OR LEAK PROCEDURE

West subter gloves, face shield, protective clothing. Have all-purpose canister mesh available. Avail contact with liquid. Secure ignition sources.

H a spill occurs, call the National Response Center 800-424-8802,

Remarks: "Even the inhibited product, when heated above 125°F, can polymerize with the generation of so much heat that ignition is possible.

# HANNAH MARINE CORPORATION SHIPYARD DIVISION

TANK BARGE CLEANING PROCEDURE

FOR

CHANGE OF CARGO

ON

THREE AND SIX COMPARTMENT BARGES

· 195' X 35' X 12'

U.S.C.G. SUB-CHAPTER (D)

ETHYLENE GLYCOL

JUNE 14, 1984

#### GENERAL

The intent of this procedure is to, in writing, re-establish guides, standards and other criteria pertinent in cleaning liquid tank barges for change of cargo with Glycol bottoms. It should be understood that in some cases, cleaning practices may vary from this procedure due to type and condition of barge and reloading requirements that might be dictated by the customer.

The implementation of this procedure is not intended as a substitute for independent judgement, but only as a guide to achieve satisfactory results. Variables may exist on some cleanings such as single skinned hulls, resulting in internal cargo tank framing, type and location of steam coils, all can contribute to cleaning methods and costs.

# 1.0 Information Requirements

- (a) The following information is essential in achieving favorable results on change of cargo cleanings.
  - (b) Type of barge, single or double skinned.
  - (c) Number of cargo compartments, lined or unlined.
- (d) Type of existing bottoms, product to be reloaded.
- (e) If possible, when was the last cleaning of the barge, is the barge frequently cleaned between loadings.

# 1.1 Inspection Prior to Cleaning

- (a) Inspect all compartments with an appropriate safety meter for a safe-to-enter status, check for level of water in all void compartments.
- (b) Open up all cargo hatches, butterworths and ullage openings, inspect from topside the amount and condition of bottoms, location of pipelines, suction bells, and/or sumps for ballasting purposes.
- (c) During this inspection, make note of any buildup of product residue.

# 1.2 Cargo Tank Washing

- (a) Ballast barge fore or aft, depending on location of sumps.
- (b) Install forced air blowers in the compartment's manway and butterworth hatches. Blow until gas free, safe for men to enter, see Paragraph 1.3 Characteristics and Safety.
- (c) Upon assurance that the compartment is in a safe to enter condition, open cargo valves and pump cleanout blind flange, drop headers, strip pure product left in barge to suitable storage container for reclamation. Hand wash walls, piping, floors and framing, if single skinned, of all product, with high pressure hose, 110 pounds of water pressure and cold water, strip waste water from compartment, remove puddles of water, if required, from floor and force air blow compartment dry.
- (d) Upon completing the washing operation, install header blind flanges with gaskets, 4 bolts each blind, install blind flange on cleanout with gaskets and bolts. Cleanout blind must be tight to prevent the cleanout from sucking air during pump off. Close up barge, dog down all hatches, butterworths and ullage openings, etc., fuel up pump engine if required.

# 1.3 Characteristics and Safety

(a) As noted on the attached chemical data sheets, Glycols do not present an inhalation health hazard, but because of unknown prior cargoes, as a margin of safety, install blowers and force air blow compartments and check level of oxygen and odor threshold (ppm) prior to entry.

#### 1.4 Waste Water Generated

(a) Condition of compartments and method of cleaning will dictate the amount of waste water generated to

# 1.4 Waste Water Generated (Cont'd)

clean for change of cargo.

(b) Cleaning from Glycol to an unrelated next product will average about 3,250 gallons of waste water requiring disposal.

# 1.5 Cost of Cleaning

(a) The cost of cleaning from Glycol to an unrelated next product will average about \$733.10 per barge.

#### FIRE & EXPLOSION HAZARD DATA

Grade -E: Combunible liquid'

Eccini. al Group -C

General -Miderate hazard, which exposed to heat or flame.

Extinguishing Agents..... Weser, slooked from, cortan disside or dry chemical

Special Fire Procedures . . . . . Cool fire exposed tanks with water,

#### HEALTH HAZARD DATA

Health Hazard Ratings

Odor Threshold (npm)
Unwallable

TLV (rpm)

General - Eye and respiratory tractification, narcuis, blood, kidney, and to a lesser degree, liver damage can be produced in animals from a single or research exposures as concentrations less than saturation.

Symptoms - Eye, nose, and threat initiation.

"Short Exposure Tolerance-200 pom for approximately one hour.

Exposure Procedures - Prevent repeated thin contact by protective clothing.

#### REACTIVITY DATA

Stability-In general, an inert solvent

Compatibility - Material: Compatible with usual shipping containers.

Carpo: Group 40 of compatibility chart.

#### SPILL OR LEAK PROCEDURE

Wear rubber gloves, foor shield, protective clothing. Have all-purpose canister mask available. Avoid personnel contact with liquid and vapor. Secure all sources of ignition.

If a spill occurs, call the National Response Center 800-474-8802.

Remarks:

# MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing, Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

			<b></b>				
		SEC	TION I	·			
MANUPACTURER'S NAME							
UNKNOWN				<del></del>			
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Ether		<del></del>	1 2012120419				
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CATALYST			ALLOYS				
VEHICLE CA .			METALLIC COATINGS				
SOLVENTS .	]		FILLER METAL PLUS COATING OR CORE FLUX				
AODITIVES			OTHERS				
OTHERS .							
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VAPOR DENSITY (AIR-1)		4.07	EVAPORATION RATE		Una	vail.	
SOLUBILITY IN WATER		Comp.					
APPEARANCE AND ODOR		Colorle	ss liquid, mild odor				
SECTION IV -	FIRE	AND E	XPLOSION HAZARD DATA			<del></del>	
FLASH POINT (Method used) 141 (			<del></del>	اها		Uel	
CONGUISHING MEDIA		am, car	bon dioxide or dry chemical		·		
PECIAL FIRE FIGHTING PROCEDURES			sed tanks with water				
JNUSUAL FIRE AND EXPLOSION HAZARDS	Una	vail.	161				
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		S	ECTION	٧	- HEA	LTH HAZARD	DATA	٠
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STEPS TO BE TAKE	N IN C	ASE MATERIA	AL IS RELE	EASI	ED OR S	PILLED	Have all-purpose canister	
							and vapor. Secure all source	_' s ì
		•					Center 800-424-8802.	$\dashv$
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RESPIRATORY PRO	TECTIO	ON ISpecify Typ	Un	ava	ail.			
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Form OSHA-20

# HANNAH MARINE CORPORATION SHIPYARD DIVISION

TANK BARGE CLEANING PROCEDURE

FOR

CHANGE OF CARGO

LIQUIDOW

CALCIUM CHLORIDE

U.S.C.G. SUB-CHAPTER (NOT LISTED)

JUNE 20, 1984

#### GENERAL

The intent of this procedure is to, in writing, re-establish guides, standards and other criteria pertinent in cleaning liquid tank barges for change of cargo containing calcium chloride bottoms. It should be understood that cleaning practices can vary from this procedure due to type and condition of barge, reloading requirements that might be dictated by the customer.

The implementation of this procedure is not intended as a substitute for independent judgement, but only as a guide for satisfactory results. Variables may exist on some cleanings such as single skinned hulls, resulting in internal cargo tank framing, type and location of steam coils can contribute to methods and and costs.

# 1.0 Information Requirements

- (a) The following information is essential on change of cargo cleanings.
  - (b) Type of barge, single or double skinned.
- (c) Number of cargo compartments, coated or uncoated.
  - (d) Existing bottoms, next product to load.
- (e) If possible, when was the last cleaning, is the barge frequently cleaned between loadings.

# 1.1 Inspection Prior to Cleaning

- (a) Inspect all compartments with the appropriate safety meter for a safe-to-enter status, check for level of water in all void compartments.
- (b) Open all cargo hatches, butterworths and ullage openings, inspect from topside the amount and condition of product left in the barge, amount and condition shall be the determining factor as to method of cleaning, see Section 1.2 Paragraph (a), also pipeline, suction bell and/or sump location for ballasting purposes.

# 1.1 Inspection Prior to Cleaning (Cont'd)

(c) During this inspection, make note of product and/or product residue, salt solids, of any consequence.

# 1.2 Cargo Tank Washing

- (a) Due to the characteristics of Liquidow (calcium chloride), salt solids coming out of suspension and settling on compartment floors in any heavy concentrations and/or if Liquidow is loaded over gas and fuel oils, can change the method of cleaning from simple hand wash to a more elaborate hot water spin including backflush and bucketing out of salt solids, Section 1.2 reflects both methods of cleaning.
- (b) Ballast barge fore or aft, depending on sump location.
- (c) Install forced air blowers in compartment manway hatches and butterworth openings, blow until gas free, safe for men to enter, see Section 1.4, Paragraph (a).
- (d) Upon being assured that the compartment is in a safe-to-enter condition, open cargo valves, connect dock vacuum pump to vessel's discharge header, start pump engine, engage pump as booster to vacuum pump and as a means to clean product from cargo pump. Hand wash walls, floors, pipelines and if equipped, cargo tank framing of product and product residues by means of a high pressure hose with water temperature at 100°. Remove clean out blinds and drain water diluted Liquidow from pipelines into cargo tanks.
- (e) If the concentration of salt solids is heavy on the floors and cannot be removed by hand washing, it will require the bucketing out of the subject solids from the floors.
- (f) If, during the inspection prior to cleaning, it is discovered that the Liquidow has been loaded on top of

# 1.2 Cargo Tank Washing

an unrelated product such as gasoline or fuel oils, etc., the method of cleaning will change from hand washing to a hot water spin and backflush.

- Install butterworth spinners approximately 36" down from tank top, connect vacuum line to vessel's discharge header, start vessel's pump engine, engage pump, spin each compartment for 10 minutes with water temperature between 120° to 130°.
- After spinning the compartment, install forced air blowers per Section 1.2, Paragraph (c).
- (i) When the tank is proven safe to enter, hand wash all remaining product from walls, floors and pipelines with water temperature at 100°. Remove cleanout blinds, open all cargo valves and drain all remaining water diluted product from pipelines into cargo tanks. If there is an accumulation of Liquidow salt solids, rust or other unrelated product in evidence upon dropping the headers, backflushing the pipeline system will be required to prevent the possibility of contamination to the next product to be loaded.

# 1.3 Backflushing Pipeline System

- It is, in most cases, safe to assume even after spinning through the header system that there is product left in the pipeline system, it is essential that this be removed by backflushing.
- Backflushing consists of installing a 1-1/2" line from the dock wash pump to the vessel's discharge header, place cargo valves in the open position and flush system at 90 to 100 pounds of water pressure. To be assured that all product is removed, inspect the suction bells in each compartment, if the water is clear and free of residue, it can be assumed that the pipelines are free of any contamination that might be harmful to the next product. 166

# 1.3 Backflushing Pipeline System (Cont'd)

- (c) Upon being assured that the pipelines are free of product or product residue, remove rust or product from the sump areas, re-rinse compartment floors.
- (d) Upon completion of washing, install blind flanges with gaskets, four bolts each blind flange, on headers. Also install blind flange with gasket and bolts. Cleanout flange must be tight to prevent the cleanout from sucking air during pump off. Close up barge, dog down all hatches, butterworths and ullage openings, etc., fuel up pump engine if required.

# 1.4 Characteristics and Safety

(a) No chemical data sheet is available as of date of this procedure. Calcium Chloride does not present an inhalation health hazard, but because of unknown prior cargoes, as a margin of safety, install blowers and force air blow compartments and check level of oxygen and odor threshold (ppm) prior to entry.

# 1.5 Waste Water Generated

- (a) Condition of compartments and method of cleaning will dictate the amount of waste water generated to clean for change of cargo.
- (b) Cleaning from Liquidow, Calcium Chloride to an unrelated next product will average about 9,750 gallons of waste water requiring disposal.

# 1.6 Cost of Cleaning

(a) The cost of cleaning from Liquidow to an unrelated next product will average about \$2,369.00 per barge.

# HANNAH MARINE CORPORATION SHIPYARD DIVISION

TANK BARGE CLEANING PROCEDURE

FOR

CHANGE OF CARGO

CAUSTIC SODA SOLUTION

JUNE 7, 1984

#### GENERAL

The intent of this procedure is to, in writing, re-establish guides, standards and other criteria pertinent in cleaning liquid tank barges for change of cargo with Caustic Soda bottoms and/or related by-products. It should be understood that in some cases, cleaning practices may vary from this procedure due to type and condition of barge and reloading requirements that might be dictated by the customer.

The implementation of this procedure is not intended as a substitute for independent judgement, but only as a guide to achieve satisfactory results. Variables may exist on some cleanings such as single or double skinned hulls, internal framing, type and location of steam coils and ambient temperatures, and all contribute to cleaning methods.

# 1.0 Information Requirements

- (a) The need for the following information upon customer contact is essential to achieve favorable results on change of cargo cleanings.
  - (b) Type of barge, single or double skinned.
- (c) Number of cargo compartments, coated or uncoated.
- (d) Type of existing bottoms and product to be reloaded.
- (e) If possible, when was the last cleaning of the barge, is barge frequently cleaned between loadings.

# 1.1. Inspection Prior to Cleaning

- (a) Inspect all void compartments with an appropriate safety meter for a safe-to-enter status, included in this inspection, check for level of water in all void compartments.
- (b) Open up all cargo hatches, butterworths and ullage openings, inspect from topside the amount and condi-

# 1.1 Inspection Prior to Cleaning (Cont'd)

tion of bottoms left in the barge, location of piping, suction bells and/or sumps for purpose of ballasting.

(c) During this preliminary inspection, make note of compartment residue, setup or frozen caustic and/or any related circumstances that might prove to be a problem in cleaning. Also, if steaming or backflushing may be necessary.

# 1.2 Cargo Tank Washing

- (a) Ballast barge fore or aft, depending on location of sumps.
- (b) If the ambient temperature is such causing bottoms to be solids due to freezing, steam barge until bottoms are in a liquified condition. Strip pure product left in barge to suitable storage tanks for reclamation. Set up butterworth spinners approximately three feet down from tank top, connect vacuum line to the vessel's discharge header, start vessel's pump engine, engage pump as booster to dock vacuum pump, spin each compartment for approximately 10 minutes with water temperature between 150° and 165°.
- (c) Upon the spinning of the compartment, install forced air blowers in the compartments manway and butterworth hatches, blow until gas free, safe for men to enter, see Paragraph 1.3 Characteristics and Safety.
- (d) When the tank is safe to enter, hand wash with high pressure hose and water temperature at 130°, all remaining caustic and caustic soda residues from walls and floors. Remove cleanout blinds, open cargo valves and drain remaining water diluted caustic soda from pipelines into cargo tanks.
- (e) Upon being assured that all pipelines are free of product or product residue, squeegee compartment floors and

# 1.2 Cargo Tank Washing (Cont'd)

force air blow compartment walls and floor dry.

(f) Upon completion of the washing operation, install header and cleanout blind flanges with gaskets, close up barge, dog down all hatches, butterworths and ullage openings, etc., fuel up pump engine if required.

# 1.3 Characteristics and Safety

(a) Due to the characteristic of caustic soda solutions, see attached data sheet, it is a requirement that personnel, prior to tank entry to hand wash, wear the following protective clothing and equipment, rubber boots, rain suits, rubber gloves, and face shields. Inhalation of caustic soda vapors does not present a health hazard, but because of unknown prior cargos, as a margin of safety, install blowers and force air blow compartments prior to entry.

# 1.4 Waste Water Generated

- (a) Method of cleaning will dictate the amount of waste water generated to clean for change of cargo.
- (b) Cleaning from caustic soda to an unrelated next product will average about 10,000 gallons of waste water requiring disposal.

# 1.5 Cost of Cleaning Caustic Soda

(a) The cleaning cost to clean from caustic soda to unrelated next product will average about \$1,257.00 per barge.

Synonyms -Sodium hydroxide, lye	United Nations Number 1824_
	CHRIS Code
•	148 298°
le NeOM	Boiling Point 198 0C 188 0F.
Formula—NaOH	Freezing Point 41 °C 41 °F
Appearance-OdorColoriess or gray; syrupy liquid; no odor	98 -144 **
App. Lanc. Com. Com. Com. Com. Com. Com. Com. Com	Vapor Pressure 20°C (68°F) (mmHg) 1.7 at 47%
Specific Gravity-up to 1.53 (solid dissolved in water)	Reid Vapor Pressure (psia) Unavailable
•	Vapor Pressure 46°C (115°F) (psia). Unavailable
Chemical Family-Course	Vapor Density (Air = 1.0)
Applicable Bulk Regulations 46 CFR Subchapter0	Solubility in Water Complete

#### FIRE & EXPLOSION HAZARD DATA

Grade -- Corrosive liquid Ectincal Group -NA

Ceneral -Non-Hammable

Flish Point (OF)..... None Flammable Limits ..... None Autoignition Temp. (°F).... None Extinguishing Agents..... None

Special Fire Procedures ..... Cannot catch fire. Cool exposed tanks with water.

#### HEALTH HAZARD DATA

Health Hazard Ratings

Odor Threshold (ppm)

TLV (ppm)

2mg/m<sup>3</sup>\*\* No odor General -Courses severe damage to the eyes. On contact with the skin, severe burns with deep ulcerations and ultimate scarring may result.

Symptoms -- If the solution splanses onto skin no pain may be felt, but hair and skin touched by caustic will begin to Selecte on contact.

Short Exposure Tolerance -- Unevallable.

Exposure Procedures—Do not delay! Flush affected areas gently with plenty of water for at least 15 minutes. Remove contaminated shoes or clothing. Get medical attention, Wash contaminated clothing including shoes.

#### REACTIVITY DATA

Stability—Heat of dilution of liquid caustic is considerable and variable, depending upon initial and final caustic CONCENTRACIONS

Compatibility-Material: Noncorrosive to subber at atmospheric temperatures. Slowly corrosive to iron, copper and monel metal. Reacts with clothing and a few metals, such as aluminum, tin, lead and zinc, and alloys containing these metals.

Cargo: Group 5 of competibility charts,

#### SPILL OR LEAK PROCEDURE

Mear rubber gloves, large face shield, and protective clothing. Avoid contact with the liquid. Neutralize with weak acid and moo, or, at dock, flush with excess water.

of a soul occurs, call the National Response Center 800-424-8802.

172

Remarks:

\*50 per cent solution

RESPONSE NO. 9



#### 217/785-2893

Refer to: 0438020004 -- DuPage Co.

Hannah Marine Corp. -- S.W.H. Permit #0986

ILD069496248

February 25, 1987

Hannah Marine Corp. Rt. 83 & Archer Ave. Lemont, Illinois 60439

#### Gentlemen:

Special Waste Hauling Permit 0986 is hereby issued to Hannah Marine Corp., to engage in special waste hauling in the State of Illinois, utilizing the vehicles, tanks and equipment enumerated in the application for permit dated February 5, 1987 and consisting of 4 page(s). A copy of said application for permit is hereby incorporated by reference.

This special waste hauling permit is issued subject to the standard conditions set forth on page(s) 6 and 7, attached hereto and incorporated herein by reference, and is further subject to any following conditions.

This permit, issued February 23, 1987, is valid from March 31, 1987, to and through March 31, 1988, for all registered vehicles with State of Illinois license plates.

If you have any questions, please feel free to contact me at 217/785-2361.

Sincerely.

Cynthia D. Ladage

Compliance Assurance Unit

Compliance Monitoring Section

Division of Land Pollution Control

CDL:CN:mab/1686g/18

cc: Northern Region

Division Hauler File



# STATE OF ILLINOIS ENVIRONMENTAL PROTECTION AGENCY APPLICATION FOR PERMIT TO HAUL SPECIAL WASTE 217/782-6761

Applicant: This Application is a:

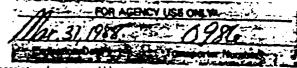
LPC 37 Rev. 11/84

Approxime 1188 Approximing 6.	POR AGENCY USE ONLY
New Application 0 9 8 6s.W.H. Permit No.	185500000000000000000000000000000000000
tenewal X U 9 8 OS.W.H. Permit No.	CFICE-SF (1807 0003 F. 1771G)
piration date of previously issued S.W.H. Permit 0 3/3 7 8 5	Expression 1 Total Vehicles Transporter
PPLICANT: COMPLETE (TYPE OR PRINT IN INK) ITEMS 1 THROUGH 7. I	F A SPECIFIC ITEM DOES NOT APPLY TO YOUR COMPANY ENTER N/A, FOR NO DENIED APPLICATION WILL RESULT IN FORFETTURE OF \$100.00 SPECIAL WAST
AULING PERMIT APPLICATION FEE.	
Hannah Marine Corporation	1-A. Name and Home Address of Principal or Authorized Representative
Business Name of Hauling Company	and Business Title
Rt. 83 & Archer Lemont II. 60439 Company Location (Not P.O. Box)	
	George Votava, Manager
Rt. 83 & Archer Ave.  Mailing Address	4420 Cross Street
Lemont. I1. 60439	
City State Zip	Downers Grove, Il 60515
DuPage	
County	Emergency Phone 312 / 242-3210
Business Phone 312 / 257-5457	
Hannah Marine Corporation	2-A. Name and Home Address of Principal or Authorized Representative
Business Name of Owner of Vehicles	and Business Title
Address	Paul J. Eaker, Mgr. Barge Operations
Lemont II 60439	,
City State Zip	840 Summit Drive
DuPage	
County	Lockport, Il 60441
Business Phone 312 / 257–5457	Emergency Phone 312 / 242-3210
CHECK, OR MONEY ORDER) MADE PAYABLE TO TREASURER, STATI CASHIER CHECK X CERTIFIED CHECK MONEY NA Do you have an Illinois Commerce Commission Certificate?  NA Do you have an Interstate Commerce Commission Certificate?  X Have you been issued a Federal Hazardous Waste Transporter to the yest list Federal Identification Number 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	YESNO_X If yes list Certificate Number
(Both must	be signed and dated)
Ise the enclosed, preprinted mailing label to send the application to:	This Agency is authorized to require this information under
LINOIS ENVIRONMENTAL PROTECTION AGENCY	Illinois Revised Statutes, 1979, Chapter 111 1/2, Section 1039
VISION OF LAND POLLUTION CONTROL	Disclosure of this information is required under that Section
ANIFEST SUB-UNIT	Failure to do so may prevent this form from being processe
	### and could result in your application being denied. This form habeen approved by the Forms Management Center.
PRINGFIELD, ILLINOIS 62706	4.50
FOR AGENCY USE ONLY	7 1987 FOR AGENCY-USE ONLY
10///./ 213.02	/ L. J. on Agaigy par one!
	Lattia Dalma 2-7250
(Myllion dass)	1 Lightin Dadage 2-23-57
Reviewed By Date	1 reportion Dadage 2-3-57 Date
Reviewed By Date	1 Lightin Dadage 2-23-57

#### VEHICLE DESCRIPTION SHEET

#### HANNAH MARINE CORPORATION

Company Name



'7. State irom which license plates are issued, license plate number(s), vehicle (parts a and b) and description (parts a and b) must be completed for each vehicle to be permitted. Tractor-trailer units, complete information for trailer only. Roll-off boxes, complete information for tractor and give a range for "capacity".

#### BE SURE APPLICATION IS COMPLETE!

STATE LICENSE PLATE NO.	VEHICLE	DESCRIPTION
State License Pläte	a. Make-Model-Year b. Identification No.	a. Type (tank trailer, flatbed, rolloff, etc.) b. Capacity (gal., berrels, cu. ft.)
ILLINOIS	a INT'L TANK 74	a TANK TRUCK
P-40711	ь A5057DGB18928	b 3,700 Gals. Capacity
ILLINOIS	- CHEVY STAKE 79	* FLATBED (STAKE)
8054-J	b C17DB9V127084	b 12' LONG
N/A	- HANNAH VAC TANK 83	• VAC TANK
N/A	b. SYD 3891PVT	L 1,500 GAL. CAPACITY
	8.	<b>8.</b>
<del></del>	<u>b.</u>	b
		<b>a.</b>
·	<u>b.</u>	b
	<b>a</b> .	<b>a.</b>
<del></del>	b	b.
	<b>a</b> .	a.
·	b.	<u>b.</u>
	8.	<b>a.</b>
·	<u>b.</u>	<u>b.</u> .
	8.	a.
	b	b
· · · · · · · · · · · · · · · · · · ·	4.	a.
	b.	b.
	<b>a.</b>	a.
	<b>b</b> .	b.
	a	a -
	b	b.
	FEB 17 1987	<b>a</b> .

IL 532-0333 LPC 37 Rev 11/84



217/785-2361

DuPage -- S.W.H. Permit #0986 Burr Ridge -- Hannah Marine Corp.

February 21, 1986

Hannah Marine Corporation 361 Frontage Road. Suite 101 Burr Ridge, Illinois

#### Gentlemen:

Special Waste Hauling Permit 0986 is hereby issued to Hannah Marine Corporation, to engage in special waste hauling in the State of Illinois. utilizing the vehicles, tanks and equipment enumerated in the application for permit dated January 28, 1986 and consisting of four page(s). A copy of said application for permit is hereby incorporated by reference.

This special waste hauling permit is issued subject to the standard conditions set forth on page(s) 6 and 7, attached hereto and incorporated herein by reference, and is further subject to any following conditions.

This permit, issued February 18, 1986, is valid from March 31, 1986, to and through March 31, 1987, for all registered vehicles with State of Illinois license plates.

If you have any questions, please feel free to contact me at 217/785-2361.

Sincerely,

Cynthia D. Ladage

Compliance Assurance Unit

Compliance Monitoring Section

Cynthia D Ladage

Division of Land Pollution Control

CDL:CN:jd/0321F/44

cc: Northern Region

Division Hauler File



# STATE OF ILLINOIS ENVIRONMENTAL PROTECTION AGENCY APPLICATION FOR PERMIT TO HAUL SPECIAL WASTE

217/782-6761 Applicant: This Application is a: FOR AGENCY USE ONLY New Application. 0 9 B 6S.W.H. Permit No. Renewal S.W.H. Permit No. Added Vehicle. Expiration date of previously issued S.W.H. Permit 0 3/3 1/8 6 Data **Permitted** APPLICANT: COMPLETE (TYPE OR PRINT IN INK) ITEMS 1 THROUGH 7. IF A SPECIFIC ITEM DOES NOT APPLY TO YOUR COMPANY ENTER N/A, FOR NOT APPLICABLE INCOMPLETE OR PHOTOCOPIED FORMS WILL BE REJECTED. DENIED APPLICATION WILL RESULT IN FORFEITURE OF \$100.00 SPECIAL WASTE HAULING PERMIT APPLICATION FEE. Hannah Marine Corporation 1-A. Name and Home Address of Principal or Authorized Representative **Business Name of Hauling Company** and Business Title Kingery Rd. at Archer, Lemont, IL 60439 Company Location (Not P.O. Box) Joseph C. Barnas, General Manager 361 Frontage Rd., Suite 101 125 Archer Avenue Mailing Address Burr Ridge. 60521 Lemont, IL 60439 DuPage **Emergency Phone** 312 / 257-5458 County Business Phone 312 / 242-3210 Hannah Marine Corporation 2-A. Name and Home Address of Principal or Authorized Representative 2 **Business Name of Owner of Vehicles** and Business Title 361 Frontage Rd., Suite 101 George Votava, Safety Director Address Burr\_Ridge, City 4420 Cross Street DuPage County Downers Grove, IL 60515 312 / 257-5458 **Business Phone** 312/242-3210 **Emergency Phone** NOTE: SEPARATE APPLICATION (INCLUDING \$100.00 APPLICATION FEE) MUST BE SUBMITTED FOR EACH ADDITIONAL OWNER. EFFECTIVE JANUARY 1, 1985, IN ACCORDANCE WITH SECTION 22.2 OF THE ENVIRONMENTAL PROTECTION ACT, EACH APPLICATION RECEIVED ON OR AFTER JANUARY 1, 1985 MUST BE ACCOMPANIED BY \$100.00 SPECIAL WASTE HAULING PERMIT APPLICATION FEE (CASHIER'S CHECK, CERTIFIED CHECK, OR MONEY ORDER) MADE PAYABLE TO TREASURER, STATE OF ILLINOIS. ENCLOSED IS (CHECK ONE) \_\_ CERTIFIED CHECK . MONEY ORDER NO\_X YES. \_NA\_ Do you have an Illinois Commerce Commission Certificate? If yes list Certificate Number... NA Do you have an Interstate Commerce Commission Certificate? NO X ... If yes list Certificate Number\_ YES. X Have you been issued a Federal Hazardous Waste Transporter Identification Number? YES X NO. If yes list Federal Identification Number I L D 0 6 9 4 9 6 2 4 8 Vehicle Descriptions, Provide information for each vehicle to be approved to haul special waste on following page(s). (Up to 29 vehicles per sheet.). I, the undersigned, certify that the information contained herein is true and complete and that the removal, transporting and disposal, storage or treatment of special wastes will comply with all requirements of Title 35, Section 809.202. 1-28-86 1-28-86 Signature of Vehicle Owner Date Signature of Hauling Company Manager (or Authorized Representative) (or Authorized Representative) (Both must be signed and dated) This Agency is authorized to require this information under Use the enclosed, preprinted mailing label to send the application to: Illinois Revised Statutes, 1979, Chapter 111 1/2, Section 1039. ILLINOIS ENVIRONMENTAL PROTECTION AGENCY Disclosure of this information is required under that Section. DIVISION OF LAND POLLUTION CONTROL MANIFEST SUB-UNIT Failure to do so may prevent this form from being processed and-could result in your application being denied. This form has 2200 CHURCHILL ROAD been approved by the Forms Management Center. SPRINGFIELD, ILLINOIS 62706

Issued

IL 532-0333 LPC 37 Rev. 11/84

FOR AGENCY USE ONLY

#### VEHICLE DESCRIPTION SHEET

	FOR AGEN	CY USE ONLY
HANNAH MARINE CORPORATION	War, 31, 1987	1986
Company Name	Expiration Date	Transporter Number
on the subject times and plates are issued, license plate number(s), vehicle (parts a and	b) and description (parts a and b) must b	e completed for each vehicle

7. State from which license plates are issued, license plate number(s), vehicle (parts a and b) and description (parts a and b) must be completed for each vehicle to be permitted. Tractor-trailer units, complete information for trailer only. Roll-off boxes, complete information for tractor and give a range for "capacity".

STATE LICENSE _PLATE NO.	VEHICLE	DESCRIPTION
a. State $\frac{\pi}{E}$ b. License Plate	a. Make-Model-Year b. Identification No.	a. Type (tank trailer, flatbed, rolloff, etc.) b. Capacity (gal., barrels, cu. ft.)
a ILLINOIS	INT'L TANK 74	* TANK TRUCK
b. P-40711	b. A5057DGB18928	b 3,700 GALS. CAPACITY
ILLINOIS	a CHEVY STAKE 79	* FLATBED (STAKE)
b. 8054-J	b C17DB9V127084	b 12' LONG
• N/A	• HANNAH VAC TANK 83	• VAC TANK
b. N/A	b. SYD 3891PVT	b 1,500 GAL. CAPACITY
a.		a.
<b>b</b> .	b.	b.
8.	•	B.
b	b.	b.
8.	a.	a.
b	b.	<u>b.</u>
8.	<b>a</b> .	a.
b	b.	b.
8.	a.	a.
b	b.	b.
		a. ,
b.	b	b
		a.
b.	b.	b.
	8.	
b.	b.	b. '_
		a.
8-	b. RECENT	
D.	JAN 30 i	945
<b>3</b> .	1789A-DLP	8.

IL 532-0333 LPC 37 Rev. 11/84



217/785-2361

Refer to: DuPage Co. -- S.W.H. Permit #0986

Burr Ridge, IL -- Hannah Marine Corp.

February 14, 1985

Hannah Marine Corp. 361 Frontage Road -- Suite 101 Burr Ridge, Illinois 60521

#### Gentlemen:

Special Waste Hauling Permit is hereby issued to Hannah Marine Corp., to engage in special waste hauling in the State of Illinois, utilizing the vehicles, tanks and equipment enumerated in the application for permit dated January 28, 1985 and consisting of 4 page(s). A copy of said application for permit is hereby incorporated by reference.

This special waste hauling permit is issued subject to the standard conditions set forth on page(s) 6 and 7, attached hereto and incorporated herein by reference, and is further subject to the following conditions:

This permit, issued February 11, 1985, is valid from March 31, 1985, to and through March 31, 1986, for all registered vehicles with State of Illinois license plates.

If you have any questions, please contact Cindy Ladage of my staff.

Sincerely.

Slugory T. Zak, Manager C.L. Compliance Assurance Unit Compliance Monitoring Section Division of Land Pollution Control

GTZ:CN:rd0348E/5

cc: Northern Region Division Hauler File



# ENVIRONMENTAL PROTECTION AGENCY APPLICATION FOR PERMIT TO HAUL SPECIAL WASTE 217/782-6761

LPC 37 Rev. 11/84

Applicant: This Application is a:		FOR AGENCY USE ONLY
New Application	/.H. Permit No.	Mor. 31. 19% 0004 098
Added Vehicle S.W. Expiration date of previously issued S.W.H.	/.H. Permit No.	Expiration Total Vehicles Transport  Date - Permitted Number
		A SPECIFIC ITEM DOES NOT APPLY TO YOUR COMPANY ENTER N/A, FOR I DENIED APPLICATION WILL RESULT IN FORFEITURE OF \$100.00 SPECIAL WA
1. Hannah Marine Corporat Business Name of Hauling Company	ion	1-A. Name and Home Address of Principal or Authorized Representative and Business Title
Kingery Rd. at Archer. Company Location (Not P O. Box)	<u>Lemont, II. 60439</u>	George Votava, Manager
361 Frontage Rd., Suit Mailing Address	e 101	4420 Cross Street
Burr Ridge IL City State	60521 Zip	Downers Grove, IL 60515
DuPage • County		Emergency Phone 312 , 242-3210
Business Phone 312 /242-321	0	
, Hannay Marine Corporat	ion	2-A. Name and Home Address of Principal or Authorized Representative
Business Name of Owner of Vehicles 361 Frontage Rd., Suit	e 101	and Business Title
Address Burr Ridge IL	60521	Paul J. Eaker, Safety Director
City State DuPage	Zip	840 Summit Drive
County	<del></del>	Lockport, IL 60441
AFTER JANUARY 1, 1985 MUST BE	ACCOMPANIED BY \$100.00 SPEC YABLE TO TREASURER, STATE O	F THE ENVIRONMENTAL PROTECTION ACT, EACH APPLICATION RECEIVED ON CIAL WASTE HAULING PERMIT APPLICATION FEE (CASHIER'S CHECK, CERTII OF ILLINOIS. ENCLOSED IS (CHECK ONE)
I. NA Do you have an Illinois Commerc	e Commission Certificate?	YESNO_X If yes list Certificate Number
	Hazardous Waste Transporter Ident  I L D 0 6 9 4 9 6 2 on for each vehicle to be approved in contained herein is true and comp	
Slave Votava	1-28-85	Yant Capar 1-28-85
Signature of Hauling Company Mai (or Authorized Representative)	nager Date	Signature of Vehicle Owner Date for Authorized Representative
	(Both must be	signed and dated)
Jse the enclosed, preprinted mailing label to LLINOIS ENVIRONMENTAL PROTECTION A DIVISION OF LAND POLLUTION CONTROL MANIFEST SUB-UNIT		This Agency is authorized to require this information un Illinois Revised Statutes, 1979, Chapter 111 1.2, Section 10 Disclosure of this information is required under that Sect Failure to do so may prevent this form from being proces
2200 CHURCHILL ROAD SPRINGFIELD, ILLINOIS 62706	RECENTE	and could result in your application being denied. This form
FOR AGENCY USE ONL		COR ACTION LICE ONLY
Cn 2	JAN 3 0 19	85 Megoy 7.3k 2-11-Es
Reviewed By	Date JEPA-DLPC	181 Sauch Aff Date
NL 532-0333		Expiration Date: /////. 31, 1980

ACENCY	1 100	A = V

#### HANNAH MARINE CORPORATION

Company Name

3-31-86

Transporter Number

7. State from which license plates are issued, license plate number(s), vehicle (parts a and b) and description (parts a and b) must be completed for each vehicle to be permitted. Tractor-trailer units, complete information for trailer only. Roll-off boxes, complete information for tractor and give a range for "capacity"

#### BE SURE APPLICATION IS COMPLETE!

STATE LICENSE PLATE NO.	VEHICLE	DESCRIPTION
a. State – b. License Plate	a. Make-Model-Year b. Identification No.	a. Type (tank trailer; flatbed, rolloff, etc.) — b. Capacity (gal., barrels, cu. ft.)
1. ILLINOIS	• INT'L TANK 74	TANK TRUCK
b. P-40711	b. A5057DGB18928	b. 3,700 GALS. CAPACITY
a ILLINOIS	• FORD STAKE 76	• FLATBED (STAKE)
b. 8422-K	b. N70EVB87101	b. 18' LONG
. ILLINOIS	a. CHEVY STAKE 79	a. FLATBED (STAKE)
b. 8054-J	b. C17DB9V127084	b. 12' LONG
4 N/A	a HANNAH VAC TANK 83	VAC TANK
b. N/A	b SYD 3891PVT	b 1,500 GAL. CAPACITY
5. 8.	a	<b>.</b>
<b>b</b> .	<u>b.</u>	b
<b>8</b> .	a	a.
b.	b.	b.
, a.	8.	
<b>b</b> .	<u>b</u> .	b.
a.	a.	a.
b	<b>b</b> .	b.
a.	a.	a.
b.	b.	b. ,
8.	3.	<b>a</b> .
b	b.	b.
<b>a</b> .		3.
11. b.	b.	b.
8.		a -
12, <del></del> b	b. RECENTED	b.
a.	• JAN 3 U 1985	3.
13, b		b.
	JEPA-DLPC 18	

IL 532-0333 LPC 37 Rev 11/84



217/785-2361

Refer to: DuPage County -- S.W.H. Permit #0986

Burr Ridge -- Hannah Marine Corp.

March 14, 1984

- Hannah Marine Corporation 361 Frontage Road, Suite 101 Burr Ridge, Illinois 60521

#### Gentlemen:

Special Waste Hauling Permit is hereby issued to Hannah Marine Corp., to engage in special waste hauling in the State of Illinois, utilizing the vehicles, tanks and equipment enumerated in the application for permit dated March 6, 1984 and consisting of 1 page(s). A copy of said application for permit is hereby incorporated by reference.

This special waste hauling permit is issued subject to the standard conditions set forth on page(s) 3 and 4, attached hereto and incorporated herein by reference, and is further subject to the following conditions:

This permit, issued March 13, 1984, is valid from March 13, 1984, to and through March 31, 1985, for all registered vehicles with State of Illinois license plates.

Sincerely,

Stephen A. Colantino, Manager

Manifest Sub-Unit

Compliance Monitoring Section

Division of Land Pollution Control

SAC:CN:b1s/0538D,22

cc: Northern Region

Division Hauler File

NewX RenewalX Add. Vehicle U986	- P. 4	STATE OF ILLINOIS ONMENTAL PROTECTION AGENCY APPLICATION FOR PERMIT TO HAUL SPECIAL WASTE	FOR AGENCY USE ONLY 3 No. 100 PROPERTY OF SELECTION OF SE
•	(PRINT OR TYPE) ITEMS I THROUGH 8	The second second	THE RESERVE OF THE PARTY OF THE
		2.Name and Home Ad	ress of Principal or Authorized Representati
Business Name of 0 361 Fronta	perator of Vehicles  ge Road, Suite 101  , Illinois	and Business Tit	Wilson, Vice-President
City DuPage	State 60521	Lockport,	
County	Zip	• • • • • • • • • • • • • • • • • • • •	2-242-3210 4. Emergency Phone 312-24
wner on separate she	et)	of vehicles, complete info	mation required in Items 1 through 3 for 3
	s with Branch Offices	and the contract of the contract of	to program the grame transportation and Grame Control of the Contr
. List Illinois Coun	ge - Will - Lake ties That Are Served ichigan - Wisconsin		
List Other States T	hat Are Served		
	NS: Provide information for each trailer units, flatbeds, and	vehicle to be approved to ha rolloff containers.	ul special waste. This includes tank
STATE LICENSE PLATE NO.	VEHICLE  a. Make-Model-Year  b. Identification No.	a. Type (tank trailer, f rolloff, etc.) b. Capacity (gal., barre	ILLINOIS EPA
, , , , , , , ,	4. Int'l Tank 74'	4. Vac Truck	The color of the c
P 40111	b.A5057DGB18928	b. 3,700 gallon	1 (MA X(U -4), ()()( ))***
8499 K-85	a.Ford Stake 76'	a. FlatBed (stal	
5013 K	b.N70EVB87101	18 ft. Long	-0100 1007
80547-85	a.Chevy Stake 79'	a. FlatBed (stal	
11996J	b.C17DB9V127084	b.12' long	20980 12003 12
1	a. Hannah Vac Tank 83'	a.Vac Tank	008/
N/A	b.SYD 3891PVT	b.1,500 gallon	apacity apacity
The state of the s	B	<u>a.</u> 3	The standard of Account of the Standard
	b		The contact parties of the control was not been been

(If additional space is necessary, use reverse side)

I, the undersigned, certify that the information contained herein is true and complete and that the removal, transporting and disposal, storage or treatment of special wastes will comply with all requirements of Chapter 9: Special Waste Hauling Regulations. I further certify that all requirements of Rule 202(C) of Chapter 9 will be complied with.

Signature of Owner

<u>3/6/8</u>

Signature of Operator (or Authorized Representative)

/6/84

(or Authorized Representative)

This Agency is authorized to require this information under illinois Revised Statutes, 1979, Chapter III 1/2, Section 1039, Disciosure of this information is required under that Section. Failure to do so may prevent this form from being processed and could result in your application being denied. This form has been approved by the Forms Management Center.

М.	111	Comp	leted	Applicati	on to:		
	ILL	INOIS	S ENV	I RÒNMENTAL	PROTEC	TION AG	ENCY
_	DIV	ISTO	N OF I	LAND/NOISE	POLLUT	ION COM	ITROL
	SPE	CIAL	WASTI	HAULING	UNIT -	٠ - الله المراجع	
	220	00 CH	URCHI	HAULING LL ROAD			
٠.	SPI	RINGF	IELD.	ILLINOIS	62706	<u> </u>	

FOR AGENCY USE ONLY

- D.LP.C.



217/785-2361

Refer to: DuPage Co. - S.W.H. Permit #0986

Lemont, Illinois -- Hannah Marine Corporation

March 24, 1983

Hannah Marine Corporation Kingery Road at Archer Avenue Lemont, Illinois 60439

#### Gentlemen:

Special Waste Hauling Permit is hereby issued to Hannah Marine Corporation, to engage in special waste hauling in the State of Illinois, utilizing the vehicles, tanks and equipment enumerated in the application for permit dated March 15, 1983 and consisting of 1 page(s). A copy of said application for permit is hereby incorporated by reference.

This special waste hauling permit is issued subject to the standard conditions set forth on page(s) 3 and 4, attached hereto and incorporated herein by reference, and is further subject to the following conditions:

This permit, issued March 21, 1983, is valid from March 21, 1983, to and through March 31, 1984, for all registered vehicles with State of Illinois license plates.

Sincerely.

Stephen J. Colantino Stephen A. Colantino, Manager

Manifest Sub-Unit

Compliance Monitoring Section

Division of Land Pollution Control

SAC:CN:sd/6737c/30

cc: Northern Region

Division Hauler File

# STATE OF ILLINOIS ENVIRONMENTAL PROTECTION AGENCY APPLICATION FOR PERMIT

	FOR AGENCY USE ONLY
1986 Sauler No.	0986/001 thru 0986/00.
lauler No.	Vehicle Nos.

AUU, FERRETE	986001 Number	TO HAUL SPECIAL WASTE	986 Hauler No.	0986/001 thru 0986/005 Vehicle Nos.
	(PRINT OR TYPE) ITEMS 1 THROUGH E	<del></del>	1	
I. Hannah Ma Business Name of	arine Corporation Operator of Vehicles Rd. at Archer Avenue	2.Name and Home A and Business Ti	tle	ncipal or Authorized Representative on - Shipyard Manager
Address - Lemont	IL		owa Cour	
City	State		, IL 604	
DuPage	60439 Zip	3. Business Phone	257-5457	4. Emergency Phone 242-32
<del>-</del>	vehicles is different than operato	•		
	es with Branch Offices	<u> </u>		
. List Illinois Cou	age, Will, Lake Inter That Are Served Aichigan, Wisconsin			
Do you have an I	llinois Commerce Commission Certif nterstate Commerce Commission Cert ONS: Provide information for each	ificate? YES NO If	yes list Ceri	tificate Number
O. VERTULE DESCRIPTI	trailer units, flatbeds, and	rolloff containers.	aui speciai v	FOR AGENCY USE ONLY
STATE LICENSE PLATE NO.	VEHICLE a. Make-Model-Year b. Identification No.	a. Type (tank trailer, rolloff, etc.) b. Capacity (gal., barr	-	ILLINOIS EPA VEHICLE NUMBERS
P049797	a. Int'l Tank 74 b. A5057DGB18928	a. Tank b. 3700 Gall	on	0986 1 001
5013K	a. Ford Stake 76 b. N70EVB87101	a. Flatbed ( b. 18 Ft. Lo		0986 1002
11996 J	a. Chevy Stake 79 b. C17DB9V127084	a. Flatbed ( b. 12 Ft. Lo		0986 , 003
11750 0	<u>a.</u> b.	RECEIVED	·	
	8. b.	- MAR 17 1983		
		STATE OF ILLINO	§	
disnosal, storage or	(If additional spectrify that the information contact treatment of special wastes will her certify that all requirements	comply with all requirements	lete and that of Chapter 9	): Special Waste Hauling
Signature (or Authorized	Representative) .	Signature of (or Authorized Rep		bate

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY DIVISION OF LAND/NOISE POLLUTION CONTROL SPECIAL WASTE HAULING UNIT 2200 CHURCHILL ROAD

This Agency is authorized to require this information under Illinois Revised Statutes, 1979. Chapter III 1/2, Section 1039. Disclaure of this information is required under that Section, Failure to do so may prevent this form from being processed and could result in your application being denied. This form has been approved by the Forms Management Center.

SPRINGFIELD, ILLINOIS 62706

FOR AGENCY USE ONLY FOR AGENCY USE ONLY 186 Stiplen Station 03 Reviewed By

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42-32



217/785-2361

Refer to: DuPage Co. — S.W.H. Permit #0986 Lemont, Illinois -- Hannah Marine Corporation

March - 24, 1983

Hannah Marine Corporation Kingery Road at Archer Avenue Lemont, Illinois 60439

#### Gentlemen:

Special Waste Hauling Permit is hereby issued to Hannah Marine Corporation, to engage in special waste hauling in the State of Illinois, utilizing the vehicles, tanks and equipment enumerated in the application for permit dated March 15, 1983 and consisting of 1 page(s). A copy of said application for permit is hereby incorporated by reference.

This special waste hauling permit is issued subject to the standard conditions set forth on page(s) 3 and 4, attached hereto and incorporated herein by reference, and is further subject to the following conditions:

This permit, issued March 21, 1983, is valid from March 21, 1983, to and through March 31, 1984, for all registered vehicles with State of Illinois license plates.

Sincerely,

Steplant Collection

Stephen A. Colantino, Manager Manifest Sub-Unit Compliance Monitoring Section Division of Land Pollution Control

SAC:CN:sd/6737c/30

cc: Northern Region
Division Hauler File

187



# Environmental Flotection Agency

# 2200 Churchill Road, Springfield, Illinois 62706

217/782-6760

SWH Permit #0986

June 15, 1981

Hannah Marine Corporation Kingery Road at Archer Avenue Lemont, Illinois 60439

Gentlemen:

Special Waste Hauling Permit is hereby issued to Hannah Marine Corporation, to engage in special waste hauling in the State of Illinois, utilizing the vehicles, tanks and equipment enumerated in the application for permit dated June 2, 1981 and consisting of 1 page(s). A copy of said application for permit is hereby incorporated by reference.

This special waste hauling permit is issued subject to the standard conditions set forth on page(s) 3, 4, 5, attached hereto and incorporated herein by reference, and is further subject to the following conditions:

This permit is valid from June 9, 1981, to and through June 9, 1982, for all registered vehicles with State of Illinois license plates.

Very truly yours,

Andrew A. Vollmer, Manager

Manifest Branch

Residual Management Section

Division of Land/Noise Pollution Control

Thomas E. Cavanagh, Jr., Manager

Residual Management Section

Division of Land/Noise Pollution Control

AAV:TEC:SAC:jd/0930C,25

cc: Northern Region

File

Add. Vehicle	ENVIRONMENTAL PROTECTION AGENCY APPLICATION FOR PERMIT TO HAUL SPECIAL WASTE	FOR AGENCY USE ONLY		
		Hauter No. Vehicle Nos.		
APPLICANT: COMPLETE (PRINT OR TYPE) ITEMS  1. Hannah Marine Corporat  Business Name of Operator of Vehicles	ion 2.Name and Home Addr and Business Title	ress of Principal or Authorized Representative		
Kingery Rd. at Archer Address Lemont IL	Aye. Deno V.	Fabbre - Shipyard Manager val Oak		
City State DuPage 60439 County - Zip	•	Darien, IL 60559		
	3.Business Phone (312) 242-3	4.Emergency Phone (24 Hour) Same		
(NOTE: If owner of vehicles is different owner on separate sheet.)	than operator of vehicles, complete info	ormation required in Items 1 through 3 for		
5.List Tilinois Cities with Branch Offices				
5.List Illinois Counties That Are Served		JUN 0:5 1981		
Cook, DuPage, W 7.List Other States That Are Served Indiana, Michig		E.F.A D.L.P.C.		
B. VEHICLE DESCRIPTIONS: Provide informati		aul special waste. This includes tank trailer		
STATE VEHICLE LICENS: a. Make-Model-Year PLATE NO. b. Identification No.	TANK DESCRIPTION  a. Type (tank trailer, f'  rolloff, etc.)	ILLINOIS EPA		
a. Int'l Tank b. A5057DGB189	74 a. Tank	0966 1001		
a.Ford Stake	76 a. Flatbed (Sto	10406 1002		
2798 K  a. Chev Stake b. C17DB9V1270				
a. b.	a. b.			
<u>a.</u> b.	a. b.			
a	a. b.			
(If a	dditional space is necessary, use reverse	e side.)		
disposal, storage or treatment of special Regulations. I further certify that all a Signature of Owner (or Authorized Representative)  Mail Completed Application To: ILLINOIS I DIVISION (2200 CHURC	wastes will comply with all requirements requirements of Rule 202(C) of Chapter 9  Date Signature of (or Authorized Report Control - Special Report Control - Special Chill ROAD	Salber 6-2-81  Derator Date  presentative)		
FOR AGENCY USE ONLY  Colling 6 9  Reviewed By Date	-81 Themas  189	FOR AGENCY USE ONLY  E. ( Jana S. J ( /7/5) - Vale  Trisued  The Company of th		

LPC 37 Rev. 7/80

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RESPONSE NO. 10

## **Browning-Ferris Industries**

25006186

NUMBER

P. O. Box A Lemont, IL 60439 PHONE (312) 257-7707

INVOICE TO

Hannah Inland Waterways Transport Route 83 and Route 171

Lemont, IL

Attn: Dave Updegraff

S. SM JOB PURCHASE ORDER 0375 Verbal per Dave Updegraff Ō5 NO . NO REQUISITION NO. CUSTOMER INVOICE DATE TERMS

12/19/79 New NUMBER MO DAY YR

Net/30

GENERAL DESCRIPTION OF WORK PERFORMED

ONSITE CLEAN UP OF BARGE CLEANING WASTES

DEPT.	CHEM CODE	CODE	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
			12/13/79					
			Loader	9.50	hrs	104.00		
		}	Transport to Waukegan	10	lds	310.00	3,100.00~	ł
			Disposal	180	сy	22.50	4,050.00,	,
			12/14/79					
			Loader	9.50	hrs	104.00	988.00	
1			Transport to Waukegan	10	lds	310.00	3,100.00	
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ì		•	12/17/79	•				
}			Loader	10.0	hrs	104.00	1,040.00	
			Transport to Waukegan	10	lds	310.00	3,100.00	
ĺ			Disposal	180	сy	22.50	4,050.00	
ĺ			12/18/79					
			Loader	9.25	hrs	104.00	962.00	
1			Transport to Waukegan	10	lds	310.00	3,100.00	
ľ	Ì		Disposal	180	сy	22.50	4,050.00	
1010			SUB-TOTAL				\$32,578.00	
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TO INSURE PROMPT AND ACCURATE CREDITING OF YOUR

ACCOUNT INCLUDE WITH YOUR REMITTANCE

1 CUSTOMER NUMBER 2 INVOICE NUMBER

PLEASE REMIT TO:

BFI

P. O. BOX 200,070

HOUSTON, TEXAS 77216

TOTAL 32,578.00 AMOUNT DUE

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## SERVICE RECEIPT AND LOG

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Form 200-	- 🛦	OP	ERATOR			CUSTOMER REPRESENTATIVE

NUMBER

P. O. Box A
Lemont, IL 60439
PHONE (312) 257-7707

INVOICE TO

Hannah Inland Waterways Transport Route 83 and Route 171 Lemont, IL 60439

ATTN: David Updegraff

PURCHASE ORDER

11 0375 Verbal Dave Updegraff

NO NO REQUISITION NO.

CUSTOMER RIVORCE DATE TERMS

NEW 12/14/79 Net 30

GENERAL DESCRIPTION OF WORK PERFORMED

Onsite Clean Up of Barge Cleaning Wastes.

11/7 Permit & Analysis (1107-I-01, 10,000 gals barge cleanings & water)  11/8 Transport - WKGN Disposal Liquid	1		402.00	402.00	
11/8 Transport - WKGN	1				
	4500	gal	310.00 0.16		
12/4 Permit & Analysis (1204-I-01, 1,500 cy contaminated soil)	1	P&A	402.00	402.00	·
12/9 Loader 12/10 Loader Transport WKGN Disposal - Solid	9.0	hrs lds	104.00 310.00	936.00 1,240.00	
12/11 Loader Transport WKGN Disposal - Solid Disposal - Liquid	9 144	lds cy.	310.00 22.50	2,790.00 3,240.00	
12/12 Loader Transport WKGN Disposal - Solid	8	lds	310.00	2,480.00	
SUB TOTAL				\$20,209.50	
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TO INSURE PROMPT AND ACCURATE CREDITING OF YOUR ACCOUNT INCLUDE WITH YOUR REMITTANCE

① CUSTOMER NUMBER

② INVOICE NUMBER

PLEASE REMIT TO: BFI

P. O. BOX 200,070

Offart 14-79

HOUSTON, TEXAS 77216

20,209.50

AMOUNT DUE

ORIGINAL INVOICE

DI'UWINING-FEPT'IS INUUSTFIES CHEMICAL SERVICES, INC.

### SERVICE RECEIPT AND LOG

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Form 200	-A	01	PERATOR			CUSTOMER REPRESENTATIVE

199

## P.O. BOX A, LEMONT, ILL. 60439

	JOB NUMBER
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ADDRESS	DRIVER CIRKET
CITY & STATE LEMICNT, ILC	UNITHO. 3/70 - 68-7
DESCRIPTION OF WORK	TIME RECORD
LIQUID WASTE DESCRIPTION 150, TALK	TIME START 02:15 AM
DISPOSAL PERMIT NUMBER	ARRIVAL TIME
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THIS MATERIAL HAS BEEN RECEIVED AND WILL BE DISPOSED OF IN ACCORDANCE WITH:	TOTAL TIMEHOURS
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### analytical report

analysis no.: 63066

21 November 1979

P. O. Box A Lemont, Il. 60439

Attn: Mr. George Zurowski

cc: Bob Piet; Schaumburg/Browning-Ferris; Houston

date taken:	7 .m.; *		ceived:	date analyzed:			
		11/1:	3/79 1535	11/14/79			
SAMPLE DESCR	IPTION:	Hannah -	Tank Truck				
Alkalinity	0.80	\$	Mercury	, 0.07	ppm		
Arsenic	0.36	ppm	Nickel	34.	ppm		
Cadmium	1.52	ppm	рН	12.35	@ 25 <sup>0</sup> C		
Chromium, tot.	14.9	ppm	Solids, total	29.97	ş		
Copper	16.5	ppm	Zinc	40.3	ppm		
Cyanide, total	0.22	ppm	Flash Point	185° F	Flash Poi		
Lead	80.1	ppm			· .		



Stor James





### analytical report

analysis no.: 63067

21 November 1979.

BROWNING-FERRIS IND.
 P. O. Box A
 Lemont, I1. 60439

Attn: Mr. George Zurowski

cc:

Bob Piet; Schaumburg/Browning-Ferris; Houston

date taken:		date re	ceived:	date analyzed:				
		11/1	3/79 1535	11/14/	79			
SAMPLE DES	CRIPTION:	Hannah	- East Pond Sludg	е				
Alkalinity	2.06	*	Mercury	, 0.49	ppm			
Arsenic	2.78	ppm	Nickel	64.	ppm			
Cadmium	3.96	ppm	pН	12.50	e 25° C			
Chromium, tot.	32.2	ppm	Solids, total	35.45	*			
Copper	37.4	ррm	Zinc	93.7	ppm			
Cyanide, total	9.58	ppm	Flash Point	110° F	Flash Poi			
Lead	144.	ppm						

Ston Jours.





### analytical report

analysis no.: 63068

21 November 1979

BROWNING-FERRIS IND. P. O. Box A Lemont, Il. 60439

Attn: Mr. George Zurowski

cc: Bob Piet; Schaumburg/Browning-Ferris; Houston

date taken:			eceived:	date analyzed:				
		11/1	.3/79 1535	11/14/7	9			
SAMPLE DESCR	RIPTION:	Hannah	- Sump Pit					
Alkalinity	1.31	<b>\$</b> . :	Mercury	, 0.01	ppm			
Arsenic	0.07	ppm	Nickel	1.2	ppm			
Cadmium	0.18	ppm	pН	9.70	@ 25° C			
Chromium, tot.	0.10	ppm	Solids, total	3.31	<b>t</b>			
Copper	0.78	ppm	Zinc	1.55	ppm			
Cyanide, total	. 1.39	ppm	Flash Point	212 <sup>0</sup> F	Flash Point			
Lead	18.8	maa		. •				





BROWNING-FERRIS INDUSTRIES CHEMICAL SERVICES, INC. 300 FANNIN BANK BUILDING HOUSTON, TEXAS 77030

221

HANNAH INLAND WATEPWAYS 536 00 39190-4 04/26/80 CONSTRUCTORS
RT 83 & ROUTE 171
LEMONT IL 60439

### GENTLE MEN!

BELOW IS A DETAIL OF ALL INVOICES OPEN ON YOUR ACCOUNT WHICH HAD NOT BEEL PAID OF THE FIRST OF THE MONTH. SOME OF THESE INVOICES EXCEED THE MET 30 DAY TERMS WHICH YOU AGREED TO IN CONSIDERATION FOR THE EXTENSION OF CREDIT.

IF THERE IS ANY PROBLEM WHICH HAS HELD UP PAYMENT THAT WE CAN HELP WITH, PLEASE LET US KNOW. YOUR REMITTANCE OR AN EXPLANATION OF THE PROBLEM HOLDING UP PAYMENT WILL BE APPRECIATED. YOU MAY CONTACT US AT 713-790-1611 OR P.O. BOX 3151, HOUSTON, TX., 77001.

=========

TOTAL NOW DUE

7,033.00

SINCERELY.

M. K. STALDER CREDIT DEPARTMENT

Browning Ferris Industries	R TYPEWRITER OR HA		Rapid Memo 98-132
M.K. STALDER Credit Manager  P.O. Box 3151 / Houston, Texas 77001 / (713) 790-1611	APID ME	MO  FROM  M. K. Stalder  BFI	mon's?
SUBJECT: Invoice #6284 dated 1-17	-80	DA	TE 4-1-80
MESSAGE			
Mr. Stoechert, I had talked with yo			
in reference to the above subject in	nvoice being pa	st due. They sugge	sted I send a
copy to you. I need to find out if	there is some	reason this invoice	has not been
paid. Any help you can give in get	ting this paid	as soon as nossible	will be very
	tring this pare	as soon as possible	WITT DE VETY
much appreciated.	<del>, , , , , , , , , , , , , , , , , , , </del>		
SIGNED / · ·	The Pain	<u> </u>	
REPLY			
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			DATE
SIGNED			i

### **Browning-Ferris Industries**

F. Q. Gor A Lemont, IL 60253 PEGNE (212) 257-7707

Hannah Inland Waterways Transport
Route 83 and Route 171
Lemont, IL 60439

David Updegraff

Onsite Clean-Up of Barge Cleaning Wastes.

ŪΕΡΤ 33 36	CHE 11 37-40	67.70	<u> </u>	OT 1 41-47	UNIT 48 50	UNIT PRICE	AMOUNT 57-66	DISCO-
3 36	37.40	87.70		3,13,	30 30	3,30	3700	
		<u> </u> 	12-27 Loader Transport	8.5	ld.		1550.00	
		} i	Disposal	90	yd.	22.50	2025.00	
			12-28 Loader . Transport Disposal	8.5 2 36	hrs ld. yd.		620.00	
			12-29 thru 1-3 Loader Standby	2.5	Irs	104.00	260.00	
010			SUB TOTAL.				7033.00	
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DO NOT KEY PUNCH SHADED
AREAS

7,033.00

TOTAL



## **Browning-Ferris Industries**

P. O. Box A Lemont, IL 60439 PHONE (312) 257-7707

7,033.00

AMOUNT DUE

INVOICE TO

Hannah Inland Waterways Transport Route 83 and Route 171 Lemont, IL 60439

David Updegraff Attn:

(R.SH JOS PURCHASE ORDER 05 | 0375 Verbal-Dave Updegraff NO. NO. REQUISITION NO. CUSTOMER INVOICE DATE **TERMS** NEW 01-17-80 Net 30

MO DAY YR

NUMBER

GENERAL DESCRIPTION OF WORK PERFORMED

Onsite Clean-Up of Barge Cleaning Wastes.

DEPT.	CHEM	COOE	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
			   12-27 Loader	8.5	hrs	104.00	\$ 884.00	
ŀ		1	Transport	5	ld.			
			Disposal	90	yd.	22.50		1
			12-28 Loader	8.5	hre	104.00	884.00	
l			Transport	2	ld.			
			Disposal	36	yd.	22.50		
İ			Disposai	1 30	yu.	22.30	810.00	
			12-29 thru 1-3	1				
			Loader Standby	2.5	Hrs	104.00	260.00	
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	l	1				JLPY	60	
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i							1	OTAL

TO INSURE PROMPT AND ACCURATE CREDITING OF YOUR

ACCOUNT INCLUDE WITH YOUR REMITTANCE

. 2 INVOICE NUMBER 1 CUSTOMER NUMBER

PLEASE REMIT TO:

**BFI** 

P. O. BOX 200,070 HOUSTON, TEXAS 77216

ORIGINAL INVOICE

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PLANATIO	N:							
UDITED		APPROVED	ENTERED				DATE ENTER	ED



## EF . Browning-Ferris Industries

INVOICE TO

Hannah Inland Waterways Transport Route 83 & Route 171

Lemont, IL 60439

ATTN: Dave Updegraff

SI.SM	JOB	PURCHASE ORDER				
11	0375	Verbal per D.	. Updegraff			
NO	NO	REQU	ISITION NO.			
CU	STOMER	INVOICE DATE	TERMS			
ì	NEW	12/27/79	Net 30			

MO DAY YR

NUMBER

GENERAL DESCRIPTION OF WORK PERFORMED

On-Site Clean Up.

DEPT.	CHEM CODE	CODE		DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
			12/19	End Loader	8.5	hrs	104.00	884.00
1		}		Transport	4	lds	310.00	1,240.00
			]	Disposal	72	yđs	22.50	1,620.00
j			12/20	End Loader	8.0	hrs	104.00	832.00
]				Transport	6	1ds	310.00	1,860.00
			·	Disposal	108	yds	22.50	2,430.00
l			12/21	End Loader	7.0	hrs	104.00	728.00
j				Transport	5	lds	310.00	1,550.00
				Disposal	90	yds	22.50	2,025.00
- {		<u> </u>	12/26	End Loader	5.5		104.00	572.00
ł				Transport	2	ı	310.00	620.00
1		'		Disposal	36	yds	22.50	810.00
1010			SUB TOT	PAL				\$15,171.00
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O INSURE	PROMPT	AND AC	CURATE CR	EDITING OF YOUR			/	TOTAL
			UR REMITT					\$ 15,171.00
CUSTON	MER NUMB	ER	W INVOIC	E NUMBER				AMOUNT DUE

PLEASE REMIT TO:

**BFI** 

P.O. BOX 200,070

HOUSTON, TEXAS 77095

ORIGINAL INVOICE

### SERVICE RECEIPT AND LOG

Equipme	ent	14.75			Job Scope .	SLODGE -GILENIO
	mical Service					
Jo	b No	912		Req. N	0	J. O. or Acct. No
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## SERVICE RECEIPT AND LOG

Coming	Passint N	<b>7</b>		-	1	P. O. No.
Plant	Han	INAH	Divid	on Love	NITER	P. O. No.
Equipm	ent L	4DF 8	) .		Job Scope	
	emical Service					
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RESPONSE NO. 11

### CONVENTIONAL

## PORTFOLIO POLICY\*



## FIREMAN'S FUND INSURANCE COMPANIES MAILING ADDRESS: SAN FRANCISCO CALIFORNIA \$ 7.7

COVERAGE IS PROVIDED IN THE FOLLOWING COMPANY, A STOCK COMPANY, THE PROPERTY OF THE PROVIDED IN THE FOLLOWING COMPANY, THE PROPERTY OF THE PROVIDED IN THE FOLLOWING COMPANY, THE PROVIDED IN THE FOLLOWING COMPANY, THE PROVIDED IN THE FOLLOWING COMPANY, THE PROVIDED IN THE FOLLOWING COMPANY, THE PROVIDED IN THE FOLLOWING COMPANY, THE PROVIDED IN THE FOLLOWING COMPANY, THE PROVIDED IN THE FOLLOWING COMPANY, THE PROVIDED IN THE FOLLOWING COMPANY, THE PROVIDED IN THE FOLLOWING COMPANY, THE PROVIDED IN THE FOLLOWING COMPANY, THE PROVIDED IN THE FOLLOWING COMPANY, THE PROVIDED IN THE FOLLOWING COMPANY, THE PROVIDED IN THE FOLLOWING COMPANY, THE PROVIDED IN THE FOLLOWING COMPANY, THE PROVIDED IN THE FOLLOWING COMPANY, THE PROVIDED IN THE PROVIDED I

þ7.

National Surety Corp.

### **DECLARATIONS**

POLICY	2-64	-MXP-457	73	65
NUMBER		-MYL-401	13	UJ

1. NAMED INSURED AND ADDRESS INO.. STREET, TOWN. COUNTY, STATE, ZIP)
Hannah Marine Corporation
361 Frontage Rd.

Burr Ridge, IL 60636

OWNER	ED INSURED IN INSUR	
THE NAMED INSUR	ED IS:	
INDIVIDUAL	PARTNERSHIP	CORPORATION

7-14-82

6-9-85

INCEPTION

EXPIRATION

12 OF A.M. STANDARD TIME AT THE ADDRESS OF THE NAMED INSURED AS STATED HEREIN

4. INSURANCE IS PROVIDED ONLY UNDER THOSE SECTIONS, AGAINST THOSE PERILS, AND FOR THOSE COVERAGES AND KINDS OF PROPERTY FOR WHICH A SPECIFIC AMOUNT OR LIMIT OF LIABILITY IS SHOWN BELOW OR IN SCHEDULES OR COVERAGE PARTS INCORPORATED HEREIN, SUBJECT TO ALL THE TERMS OF THE POLICY AND ALL FORMS AND ENDORSEMENTS MADE A PART HEREOF.

### PROPERTY COVERAGE

ITEM NO.	AMOUNT	PERCENT OF COINSURANCE APPLICABLE	BEE CODES BEFORE	DESCRIPTION AND LOCATION OF PROPERTY COVERED
				As Per Attached Property Gard Forms 140382 and 140386
	•			
			·	
25.0	1. FIRE AND LIGHT	INING 3. VAND	ALISM AND MALICIC	US MISCHIEF S. AND INSERTION OF CODE NUMBER MEANS

CODES 2. EXTENDED COVERAGE 4. SPRINKLER LEAKAGE

INSERTION OF CODE NUMBER MEANS A SPECIFIC PREMIUM CHARGE HAS BEEN MADE FOR THAT PERIL OR COVERAGE.

SUBJECT TO FORMS AND ENDORSEMENT NO. (6) 140382(5/76)Rev.,140381(10/74)Rev.,140391(5/77)Rev., 140506(10/75), 140402(1/77), 180132(5/76), CF1506(5/77), 140395(4/76)Rev., 140386(11/77).

### GENERAL LIABILITY-AUTOMOBILE COVERAGE

FORM NUMBER	SPECIAL POLICY PROVISIONS—NAME OF COVERAGE PAR	RT(S) INC	ORPORA	TED I	HEREI	N			
140067	GENERAL LIABILITY/AUTOMOBILE COVERAGE—SPECIAL PO	LICY PRO	VISIONS	•			•		
105040	Comprehensive General Liability Insu	rance							
105032	Personal Injury Liability Insurance								
105033	Premises Medical Payments Insurance							<u>.</u> .	
140583	Business Auto Policy			• •			1 : 4	e . i	

ENDORSEMENTS ATTACHED 5975(4/78)pgs 1,2&3, 5985(7/80)-IL., 140624, 5985(1/79)-MI., 140808 101051, 180162, 105053, 105029, 105160, 180009, 105178

### **OPTIONAL COVERAGE**

LIMITS OF LIABILITY	COVERAGES	FORM NO.(S) AND DESCRIPTION(S)	
	140038(4/73), 135113(6/80)		

TOTAL ADVANCE PREMI	UM	IF PAID IN ANNUAL	INSTALLMEN	NTS, PREMIUMS, PREMIU	M DUE:	
\$	\$ 25,802.	AT INCEPTION \$	TBD	IST ANNIVERSARY	S TBD	2ND ANNIVERSARY
MORTGAGEE INAME AND AL	DRESS)					
		•	ROL	Ling Burdick Hi	inter (	<b>CO.</b>
9/28/82	NTERSIGNATURE DATE	ox 0.1	BY_	DUNTERS ICAL TURE OF A	UTHORIZE	D AGENT
5727-10-66 (REV. 3-80	0)	71	้อ			

REAL PROPERTY	en en en en en en en en en en en en en e	AL LIABILIT	COMMERCIA COVERAGE
	EAT TOTATELY		

It I POLICY COVERAGE temoves to the contribution of the contribution of the remains the contribution of th

GENERAL LIABILITY

Comprehensive General Liability Insurance

17.17

These Declarations Are Issued In Conjunction With And Are Part Of Policy Form GL 00 02 01 73.

IF THE FOLLOWING INFORMATION IS NOT COMPLETE, REFER TO THE APPROPRIATE DECLARATIONS ATTACHED TO THE POLICY.

INSURED	Hannah Marine Corporation	POLICY NUMBER MXP 457 73 65	SEQUENTIAL NO.
PRODUCER	Rollins Burdick Hunter of Il	FFECTIVE DATE 7-14-8	2

### **DECLARATIONS**

INSURANCE IS PROVIDED ONLY FOR THOSE COVERAGES FOR WHICH LIMITS OF LIABILITY ARE STATED IN THE PLACE PROVIDED IN THESE DECLARATIONS.

## COMPREHENSIVE GENERAL LIABILITY COVERAGE PART BODILY INJURY LIABILITY PROPERTY DAMAGE LIABILITY COMBINED BODILY INJURY AND PROPERTY DAMAGE LIABILITY

COVERAGES

### LIMITS OF LIABILITY

E	ACH OCCUR	RENCE		AGGREG	ATE
\$		,000	5		,000
\$		,000	\$		,000
\$	500	,000	\$	500	,000

THE	ALIDIT	PERIOD	SHALL	RP.		MONTHLY
1116	AUDII	LEKIOD	JIIALL	P	_	MONINE

1 1	OUARTERLY
-	UUAKIEKLI

**MANNUALLY** 

This Form must be attached to Change Endorsement when issued after the Policy is written.

ONE OF THE FIREMAN'S FUND INSURANCE COMPANIES AS NAMED IN THE POLICY.

: 11xc2 1 f

My De Bain
PRESIDENT

## COMMERCIAL COVERAGE TO THE PROPERTY OF THE PRO

POLICY COVERAGE

GENERAL LIABILITY COVERAGE DE TRE NICE GENERAL LIABILITY COVERAGE DE TRE NICE COMPREHENSIVE GENERAL (1998) PARTICIPATION DE LIABILITY INCOMPREHENSIVE GENERAL (1998) PARTICIPATION DE LIABILITY DE LIABILITY COVERAGE DE LIABILITY DE LIABILITY COVERAGE DE LIABILITY DE LIABILITY COVERAGE DE LIABILITY DE LIABILIT

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These policy provisions, together with all applicable terms, conditions and exclusions of the policy and the coverage parts and endorsement made a part hereof by designation in the Declarations, complete the Liability Coverage of this policy.

### COVERAGE PART — COMPREHENSIVE GENERAL LIABILITY INSURANCE

### 1. INSURING AGREEMENT

The Company will pay on behalf of the insured all sums which the insured shall become legally obligated to pay as damages because of bodily injury or property damage to which this insurance applies, caused by an occurrence, and the Company shall have the right and duty to defend any suit against the insured seeking damages on account of such bodily injury or property damage, even if any of the allegations of the suit are groundless, false or fraudulent, and may make such investigation and settlement of any claim or suit as it deems expedient, but the Company shall not be obligated to pay any claim or judgment or to defend any suit after the applicable limit of the Company's liability has been exhausted by payment of judgments or settlements.

### 2. EXCLUSIONS

This insurance does not apply:

- (a) to liability assumed by the insured under any contract or agreement except an incidental contract; but this exclusion does not apply to a warranty of fitness or quality of the named insured's products or a warranty that work performed by or on behalf of the named insured will be done in a workmanlike manner:
- (b) to bodily injury or property damage arising out of the ownership, maintenance, operation, use, loading or unloading of (1) any automobile or aircraft owned or operated by or rented or loaned to any insured, or (2) any other automobile or aircraft operated by any person in the course of his employment by any insured; but this exclusion does not apply to the parking of an automobile on premises owned by, rented to or controlled by the named insured or the ways immediately adjoining, if such automobile is not owned by or rented or loaned to any insured;
- (c) to bodily injury or property damage arising out of (1) the ownership, maintenance, operation, use, loading or unloading of any mobile equipment while being used in any prearranged or organized racing, speed or demolition context or in any stunting activity or in practice or preparation for any such contest or activity or (2) the operation or use of any snowmobile or trailer designed for use therewith;

- (d) to bodily injury or property damage arising out of and in the course of the transportation of mobile equipment by an automobile owned or operated by or rented or loaned to any insured;
- (e) to bodily injury or property damage arising out of the ownership, maintenance, operation, use, loading or unloading of (1) any watercraft owned or operated by or rented or loaned to any insured, or (2) any other watercraft operated by any person in the course of his employment by any insured; but this exclusion does not apply to watercraft while ashore on premises owned by, rented to or controlled by the named insured;
- (f) to bodily injury or property damage arising out of the discharge, dispersal, release or escape of smoke, vapors, soot, fumes, acids, alkalis, toxic chemicals, liquids or gases, waste materials or other irritants, contaminants or pollutants into or upon land, the atmosphere or any water course or body of water; but this exclusion does not apply if such discharge, dispersal, release or escape is sudden and accidental;
- (g) to bodily injury or property damage due to war, whether or not declared, civil war, insurrection, rebellion or revolution or to an act or condition incident to any of the foregoing, with respect to (1) liability assumed by insured under an incidental contract, or (2) expenses for first aid under the Supplementary Payments provision;
- (h) to bodily injury or property damage for which the insured or his indemnitee may be held liable (1) as a person or organization engaged in the business of manufacturing, distributing, selling or serving alcoholic beverages, or (2) if not so engaged, as an owner or lessor of premises used for such purposes, if such liability is imposed (i) by, or because of the violation of, any statute, ordinance or regulation pertaining to the sale, gift, distribution or use of any alcoholic beverage,
- (ii) by reason of the selling, serving or giving of any alcoholic beverage to a minor or to a person under the influence of alcohol or which causes or contributes to the intoxication of any person; but part (ii) of this exclusion does not apply with respect to liability of the insured or his indemnitee as an owner or lessor described in (2) above;

This Form must be attached to Change Endorsement when issued after the Policy is written.

All and the policy of the Fireman's fund insurance companies as named in the policy? City the free and the policy of the policy

- (i) to any obligation for which the insured or any carrier as his insurer may be held liable under any workers' compensation, unemployment compensation or disability benefits law, or under any similar law;
- (j) to bodily injury to any employee of the insured arising out of and in the course of his employment by the insured or to any obligation of the insured to indemnify another because of damages arising out of such injury; but this exclusion does not apply to liability assumed by the insured under an incidental contract;
- (k) to property damage to (1) property owned or occupied by or rented to the insured, (2) property used by the insured, or (3) property in the care, custody or control of the insured or as to which the insured is for any purpose exercising physical control; but parts (2) and (3) of this exclusion do not apply with respect to liability under a written sidetrack agreement and part (3) of this exclusion does not apply with respect to property damage (other than to elevators) arising out of the use of an elevator at premises owned by, rented to or controlled by the named insured;
- (1) to property damage to premises alienated by the named insured arising out of such premises or any part thereof;
- (m) to loss of use of tangible property which has not been physically injured or destroyed resulting from (1) a delay in or lack of performance by or on behalf of the named insured of any contract or agreement, or (2) the failure of the named insured's products or work performed by or on behalf of the named insured to meet the level of performance, quality, fitness or durability warranted or represented by the named insured; but this exclusion does not apply to loss of use of other tangible property resulting from the sudden and accidental physical injury to or destruction of the named insured's products or work performed by or on behalf of the named insured after such products or work have been put to use by any person or organization other than an insured;
- (n) to property damage to the named insured's products arising out of such products or any part of such products;
- (o) to property damage to work performed by or on behalf of the named insured arising out of the work or any portion thereof, or out of materials, parts or equipment furnished in connection therewith;
- (p) to damages claimed for the withdrawal, inspection, repair, replacement, or loss of use to the named insured's products or work completed by or for the named insured or of any property of which such products or work form a part, if such products, work or property are withdrawn from the market or from use because of any known or suspected defect or deficiency therein.

### 3. PERSONS INSURED

- Each of the following is an insured under this insurance to the extent set forth below:
- (a) if the named insured is designated in the Declarations as an individual, the person so designated but only with respect to the conduct of a business of which he is the sole proprietor, and the spouse of the named insured with respect to the conduct of such a business;

- (b) if the named insured is designated in the Declarations as a partnership or joint venture, the partnership or joint venture so designated and any partner or member thereof but only with respect to his liability as such;
- (c) if the named insured is designated in the Declarations as other than an individual, partnership or joint venture, the organization so designated and any executive officer, director or stockholder thereof while acting within the scope of his duties as such;
- (d) any person (other than an employee of the named insured) or organization while acting as real estate manager for the named insured; and
- (e) with respect to the operation, for the purpose of locomotion upon a public highway, of mobile equipment registered under any other motor vehicle registration law, (i) an employee of the named insured while operating any such equipment in the course of his employment, and (ii) any other person while operating with the permission of the named insured any such equipment registered in the name of the named insured and any person or organization legally responsible for such operation, but only if there is no other valid and collectible insurance available, either on a primary or excess basis, to such person or organization;

provided that no person or organization shall be an insured under this paragraph (e) with respect to: (1) bodily injury to any fellow employee of such person injured in the course of his employment, or (2) property damage to property owned by, rented to, in charge of or occupied by the named insured or the employer of any person described in subparagraph (ii).

This insurance does not apply to bodily injury or property damage arising out of the conduct of any partnership or joint venture of which the insured is a partner or member and which is not designated in this policy as a named insured.

### 4. LIMITS OF LIABILITY

Regardless of the number of (1) insureds under this policy, (2) persons or organizations who sustain bodily injury or property damage, (3) claims made or suits brought on account of bodily injury or property damage or (4) units of mobile equipment to which this policy applies, the Company's liability is limited as follows:

(a) Separate limits of liability for bodily injury liability and property damage liability.

The total liability of the Company for all damages, including damages for care and loss of services, because of bodily injury sustained by one or more persons as the result of any one occurrence shall not exceed the limit of bodily injury liability stated in the Declarations as applicable to "each occurrence."

Subject to the above provision respecting "each occurrence," the total liability of the Company for all damages because of (1) all bodily injury included within the completed operations hazard and (2) all bodily injury included within the products hazard shall not exceed the limit of bodily injury liability stated in the Declarations as "aggregate."

The total liability of the Company for all damages because of all property damage sustained by one or more persons or organizations as the result of any one occurrence shall not exceed the limit of property damage liability stated in the Declarations as applicable to "each occurrence."

Subject to the above provision respecting "each occurrence," the total liability of the Company for all damages because of all property damage to which this coverage applies and described in any of the numbered subparagraphs below shall not exceed the limit of property damage liability stated in the Declarations as "aggregate": (1) all property damage arising out of premises or operations rated on a remuneration basis or contractor's equipment rated on a receipts basis, including property damage for which liability is assumed under any incidental contract relating to such premises or operations. but excluding property damage included in subparagraph (2) below; (2) all property damage arising out of and occurring in the course of operations performed for the named insured by independent contractors and general supervision thereof by the named insured, including any such property damage for which liability is assumed under any incidental contract relating to such operations, but this subparagraph (2) does not include property damage arising out of maintenance or repairs at premises owned by or rented to the named insured or structural alterations at such premises which do not involve changing the size of or moving buildings or other structures; (3) all property damage included within the products hazard and all property damage included within the completed operations

Such aggregate limit shall apply separately to the property damage described in subparagraphs (1), (2) and (3) above, and under subparagraphs (1) and (2), separately with respect to each project away from premises owned by or rented to the named insured.

(b) Combined single limit of liability for bodily injury and property damage liability.

The total liability of the Company for all damages under all bodily injury liability and property damage liability coverages of this policy because of bodily injury or property damage sustained by one or more persons or organizations as a result of any one occurrence shall not exceed the limit of liability stated in the Declarations for "each occurrence."

Subject to the above provision respecting "each occurrence," the total liability of the Company for all damages arising out of the products hazard and completed operations hazard shall not exceed the limits of liability stated in the Declarations as "aggregate."

Subject to the above provision respecting "each occurrence," the total liability of the Company for all damages because of all property damage to which the policy applies

(i) arising out of premises or operations rated on a remuneration basis or contractors equipment rated on a receipts basis, including liability assumed under any inciden-

tal contract relating to such premises or operations or

(ii) arising out of and occurring in the course of operations, other than maintenance or repairs at premises owned by or rented to the named insured or structural alterations at such premises which do not involve changing the size of or moving buildings or other structures, performed for the named insured by independent contractors and general supervision thereof by the named insured including liability assumed under any incidental contract relating to such operations

shall not exceed the limit of liability stated in the Declarations as "aggregate." Said aggregate limit of liability shall apply separately to (i) and (ii) and under each separately to each project away from premises owned by or rented to the named insured.

With respect to any occurrence for which notice of this policy is given in lieu of security or when this policy is certified as proof of financial responsibility for the future under the provisions of the motor vehicle financial responsibility law of any state, province or other territorial jurisdiction, the stated limits of liability as respects each occurrence shall be applied to provide the separate limits of liability required by such law for bodily injury liability and property damage liability to the extent of the coverage required by such law, but the separate application of such limits shall not increase the total limit of the Company's liability.

For the purpose of determining the limit of the Company's liability under (a) or (b) above, all bodily injury and property damage arising out of continuous or repeated exposure to substantially the same general conditions shall be considered as arising out of one occurrence.

### 5. POLICY PERIOD; TERRITORY

This insurance applies only to bodily injury or property damage which occurs during the Policy Period within the policy territory.

### 6. When used as a premium basis:

"admissions" means the total number of persons, other than employees of the named insured, admitted to the event insured or to events conducted on the premises whether on paid admission tickets, complimentary tickets or passes;

"cost" means the total cost to the named insured with respect to operations performed for the named insured during the policy period by independent contractors of all work let or sub-let in connection with each specific project, including the cost of all labor, materials and equipment furnished, used or delivered for use in the execution of such work, whether furnished by the owner, contractor or subcontractor, including all fees, allowances, bonuses or commissions made, paid or due;

"receipts" means the gross amount of money charged by the named insured for such operations by the named insured or by others during the policy period as are rated on a receipts basis other than receipts from telecasting, broadcasting or motion pictures, and includes taxes, other than taxes which the named insured collects as a separate :7.

and and and an analysis of the second

item and remits directly to a governmental division;

"remuneration" means the entire remuneration earned during the policy period by proprietors and by all employees of the named insured, other than chauffeurs (except operators of mobile equipment) and aircraft pilots and co-pilots, subject to any overtime earnings or limitation of remuneration rule applicable in accordance with the manuals in use by the Company; "sales" means the gross amount of money charged by the named insured or by others trading under his name for all goods and products sold or distributed during the policy period and charged during the policy period for installation, servicing or repair, and includes taxes, other than taxes which the named insured and such others collect as a separate item and remit directly to a governmental division.

2 64 MXX 80079578 2 64 MXP 04577365

other than WORKERS'
COMPENSATION is provided
in the following Company:
NATIONAL SURETY
CORPORATION
CHICAGO, IL
A STOCK INSURANCE CO. (07)

COVERNOE TOR SECOND



FURTFOLIO POLICY (R)

GENERAL DECLARATIONS

Named Insured and Mailing Address

HANNAH MARINE CORP.

361 FRONTAGE RD. BURR RIDGE

IL 60636

Producer Name and Address

ROLLINS, BURDICK, HUNTER OF ILLINOIS

The Named Insured is a(n) CORPORATION

Business or Operations of the Named Insured: CLEANING & REPAIRING OF BARGES

Insurance is provided only under each coverage of this policy or the WORKERS' COMPENSATION AND EMPLOYERS' LIABILITY FOLICY listed below, subject otherwise to all the terms and conditions of the General Provisions and of said Coverage(s) or policy having reference thereto.

PROPERTY COVERAGES
GENERAL LIABILITY COVERAGES
AUTO INSURANCE COVERAGES

Policy Feriod (For above coverages)
INCEPTION DATE 06-09-85
EXPIRATION DATE 06-09-86
Beginning and Ending at 12:01 A.M., Standard Time at the address of the insured

It is agreed and understood that the BUSINESS AUTO POLICY, GARAGE POLICY AND RUCKER'S FOLICY are self contained policies forming part of the policy identified above. Premium is included in the Premium Summary below.

DECLARATIONS CONTINUED ON PAGE 2

INSURED'S COPY

☐ BRANCH COPY

THED INSURED

HANNAH MARINE CORP.

FORTFOLIO FOLICY (R)

# FIREMAN'S FUND INSURANCE COMPANIES MAIL ADDRESS SANFRANCISCO CALFORMA

### GENERAL LIABILITY DECLARATIONS

"INSURANCE IS PROVIDED ONLY FOR THOSE COVERAGES. LIHITS OF LIABILITY OND ENDORSEMENTS SHOWN BELOW.

GENERAL LIABILITY COVERAGES

LIMITS OF LIABILITY

COMPREHENSIVE GENERAL LIABILITY COVERAGE PART

COMBINED BODILY INJURY AND FROFERTY DAMAGE LIABILITY

\$1,000,000 EACH DCCURRENCE \$1.000.000 AGGREGATE

PREMISES MEDICAL PAYMENTS COVERAGE PART

\$2,000 EACH PERSON \$10,000 EACH ACCIDENT

MULTIPLE TO SERVICE OF THE SERVICE O

▲ ERSONAL INJURY LIABILITY INSURANCE (105032 07-83)

LIHIT OF LIABILITY \$1.000.000 AGGREGATE INSURED'S PARTICIPATION 0.0 PERCENT

THE INSURANCE AFFORDED IS ONLY WITH RESPECT TO PERSONAL INJURY ARISING OUT OF AN OFFENSE INCLUDED WITHIN THE GROUPS OF OFFENSES SHOWN BELOW:

- A. FALSE ARREST. DETENTION OR IMPRISONMENT, OR MALICIOUS PROSECUTION
- B. LIBEL, SLANDER, DEFAMATION OR VIOLATION OF RIGHT OF PRIVACY
- C. DRONGFUL ENTRY OR EVICTION OR OTHER INVASION OF RIGHT OF PRIVATE DECUPANCY

EXCLUSION (COMPLETED OPERATIONS HAZARD AND PRODUCTS HAZARD) (GL 21 04 07 66)

AMENDATORY ENDORSEMENT - ADDITIONAL DEFINITION (GL 00 19 07 78)

MACHENDATORY ENDORSEMENT (GL 00 32 04 84)

UTHER GENERAL LIABILITY ENDORSEMENTS

001 HOST LIQUOR LIABILITY

120009

002 POLLUTUIN EXCLUSION

GL 21 33 10 81

DECLARATIONS CONTINUED ON PAGE 2

222

INSURED'S COPY

BRANCH COPY

### COMMERCIAL COVERAGE

### GENERAL LIABILITY

**Pollution Exclusion** 

**POLICY AMENDMENT** 

Hannan Marine Corporation, et al Eff: 6/9/86

GL 21 33 02 85

Producer: Rollins Burdick Hunter of IL 2-64 MXX 80139960

This endorsement modifies such insurance as is afforded by the provisions of the policy relating to the following:

COMPREHENSIVE GENERAL LIABILITY INSURANCE
CONTRACTUAL LIABILITY INSURANCE
MANUFACTURERS AND CONTRACTORS LIABILITY INSURANCE
OWNERS AND CONTRACTORS PROTECTIVE LIABILITY INSURANCE
OWNERS, LANDLORDS AND TENANTS LIABILITY INSURANCE
SMP LIABILITY INSURANCE
STOREKEEPERS INSURANCE

It is agreed that the exclusion relating to the discharge, dispersal, release or escape of smoke, vapors, soot, fumes, acids, alkalis, toxic chemicals, liquids or gases, waste materials or other irritants, contaminants or pollutants is replaced by the following:

- (1) to bodily injury or property damage arising out of the actual, alleged or threatened discharge, dispersal, release or escape of pollutants:
- (a) at or from premises owned, rented or occupied by the named insured;
- (b) at or from any site or location used by or for the named insured or others for the handling, storage, disposal, processing or treatment of waste;
- (c) which are at any time transported, handled, stored, treated, disposed of, or processed as waste by or for the named insured or any person or organization for whom the named insured may be legally responsible; or

- (d) at or from any site or location on which the named insured or any contractors or subcontractors working directly or indirectly on behalf of the named insured are performing operations:
- (i) if the pollutants are brought on or to the site or location in connection with such operations; or
- (ii) if the operations are to test for, monitor, clean up, remove, contain, treat, detoxify or neutralize the pollutants.
- (2) to any loss, cost or expense arising out of any governmental direction or request that the named insured test for, monitor, clean up, remove, contain, treat, detoxify or neutralize pollutants.

Pollutants means any solid, liquid, gaseous or thermal irritant or contaminant, including smoke, vapor, soot, fumes, acids, alkalis, chemicals and waste. Waste includes materials to be recycled, reconditioned or reclaimed.

Signature	of l	insured
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This Form must be attached to Change Endorsement when issued after the Policy is written.

ONE OF THE FIREMAN'S FUND INSURANCE COMPANIES AS NAMED IN THE POLICY

William d. Lling

PRESIDENT

II XCL

# COMMERCIAL COVERAGE GENERAL LIABILITY Pollution Exclusion POLICY AMENDMENT IL 09 28 06 85

This insurance modifies such insurance as is afforded by the provisions of the policy relating to the following:

BUSINESSOWNERS POLICY
COMPREHENSIVE GENERAL LIABILITY INSURANCE
CONTRACTUAL LIABILITY INSURANCE
MANUFACTURERS AND CONTRACTORS LIABILITY INSURANCE
OWNERS AND CONTRACTORS PROTECTIVE LIABILITY INSURANCE
OWNERS, LANDLORDS AND TENANTS LIABILITY INSURANCE
SMP LIABILITY INSURANCE
STOREKEEPERS INSURANCE

It is agreed that the exclusion relating to the discharge, dispersal, release or escape of smoke, vapors, soot, fumes, acids, alkalis, toxic chemicals, liquids or gases, waste materials or other irritants, contaminants or pollutants is replaced by the following:

- (1) to bodily injury or property damage arising out of the actual, alleged or threatened discharge, dispersal, release or escape of pollutants:
- (a) at or from premises owned, rented or occupied by the named insured:
- (b) at or from any site or location used by or for the named insured or others for the handling, storage, disposal, processing or treatment of waste;
- (c) which are at any time transported, handled, stored, treated, disposed of, or processed as waste by or for the named insured or any person or organization for whom the named insured may be legally responsible; or

- (d) at or from any site or location on which the named insured or any contractors or subcontractors working directly or indirectly on behalf of the named insured are performing operations:
- (i) if the pollutants are brought on or to the site or location in connection with such operations; or
- (ii) if the operations are to test for, monitor, clean up, remove, contain, treat, detoxify or neutralize the pollutants.
- (2) to any loss, cost or expense arising out of any governmental direction or request that the named insured test for, monitor, clean up, remove, contain, treat, detoxify or neutralize pollutants.

Pollutants means any solid, liquid, gaseous or thermal irritant or contaminant, including smoke, vapor, soot, fumes, acids, alkalis, chemicals and waste. Waste includes materials to be recycled, reconditioned or reclaimed.

 · 			<del></del>	
	Signature of Insure	2		

This Form must be attached to Change Endorsement when issued after the Policy is written.

ONE OF THE FIREMAN'S FUND INSURANCE COMPANIES AS NAMED IN THE POLICY

William M. Allinia

PRESIDENT

Broadenings

Non-sudden or gradual emissions of pollutants (other at or from insured premises; than waste):

FOLICY NUMBER . 2 64 MXX 80139960 2 64 MXX 80079578

FREV. POLICY NOS.

Coverage for sections other than WORKERS' COMPENSATION is provided in the following Company: NATIONAL SURETY CORPORATION CHICAGO, IL A STOCK INSURANCE CO. (07)



PORTFOLIO POLICY (R)

**GENERAL DECLARATIONS** 

Risk ID. 161/

Named Insured and Mailing Address

HANNAH MARINE CORPORATION, JAMES A. HANNAH, INC., 5801 ASSOCIATES. LTD., HANNAH BROTHERS PARTNERSHIP, 5101 HANNAH BARGE LIMITED PARTNER-SHIP, DONALD C. HANNAH ENTERPRISES, HANNAH INTERNATIONAL MARINE CORPORATION, FLOWERSIDE ENTERPRISES LTD., KRISMARK ENTERPRISES CORPORATION, TAMPA TVG CORPORATION AND O.L. SCHMIDT BARGE LINES.

361 FRONTAGE RD. BURR RIDGE

IL 60621

Producer Name and Address

ROLLINS, BURDICK, HUNTER OF ILLINOIS

The Named Insured is a(n) CORPORATION

Business or Operations of the Named Insured: CLEANING & REPAIRING OF BARGES

Insurance is provided only under each coverage of this policy or the WORKERS' COMPENSATION AND EMPLOYERS' LIABILITY POLICY listed below, subject otherwise to all the terms and conditions of the General Provisions and of said Coverage(s) or policy having reference thereto.

> PROPERTY COVERAGES GENERAL LIABILITY COVERAGES AUTO INSURANCE COVERAGES BOILER AND MACHINERY COVERAGE

Policy Period (For above coverages) INCEPTION DATE 06-09-86 EXPIRATION DATE 06-09-87 Beginning and Ending at 12:01 A.M., Standard Time at the address of the insured

It is agreed and understood that the BUSINESS AUTO POLICY. GARAGE POLICY AND TRUCKER'S POLICY are self contained policies forming part of the molicy identified above. Premium is included in the Premium Summary below.

Rollius Burdick Hyater of Illianis, Inc.

225

DECLARATIONS CONTINUED ON PAGE 2

INSURED'S COPY

☐ BRANCH COPY

### HANNAH MARINE CORP.

PORTFOLIO POLICY (R)



### GENERAL LIABILITY DECLARATIONS

AND ENDORSEMENTS SHOWN BELOW.

### GENERAL LIABILITY COVERAGES

LIMITS OF LIABILITY

COMPREHENSIVE GENERAL LIABILITY COVERAGE PART

COMBINED BODILY INJURY AND PROPERTY DAMAGE LIABILITY

\$1,000,000 EACH DCCURRENCE \$1,000,000 AGGREGATE

PREHISES MEDICAL PAYMENTS COVERAGE PART

\$1,000 EACH PERSON \$10,000 EACH ACCIDENT

### ENERAL LIABILITY ENDORSEMENT(S)

ERSONAL INJURY LIABILITY INSURANCE (105032 07-83)

LIMIT OF LIABILITY \$1,000,000 AGGREGATE
INSURED'S PARTICIPATION 0.0 PERCENT

THE INSURANCE AFFORDED IS ONLY WITH RESPECT TO PERSONAL INJURY ARISING UT OF AN OFFENSE INCLUDED WITHIN THE GROUPS OF OFFENSES SHOWN BELOW:

MA. FALSE ARREST, DETENTION OR IMPRISONMENT, OR MALICIOUS PROSECUTION IS. LIBEL, SLANDER, DEFAMATION OR VIOLATION OF RIGHT OF PRIVACY C. WRONGFUL ENTRY OR EVICTION OR OTHER INVASION OF RIGHT OF PRIVATE ADDICUPANCY

CLUSION (COMPLETED OPERATIONS HAZARD AND PRODUCTS HAZARD) (GL 21 04 07 66)

MENDATORY ENDORSEMENT - ADDITIONAL DEFINITION (GL 00 19 07 78)

ENDATORY ENDORSEMENT (GL 00 32 04 84)

DILUTION EXCLUSION (IL 09 28 06 85)

### HER GENERAL LIABILITY ENDORSEMENTS

002 FOLLUTION EXCLUSION GL 21 33 10 81

ADDITIONAL INSURED (OWNERS LESSEES)

GL 20 10 01 73

226

### **COMMERCIAL COVERAGE**

### GENERAL LIABILITY

#### **Pollution Exclusion**

#### **POLICY AMENDMENT**

GL 21 33 02 85

This endorsement modifies such insurance as is afforded by the provisions of the policy relating to the following:

COMPREHENSIVE GENERAL LIABILITY INSURANCE
CONTRACTUAL LIABILITY INSURANCE
MANUFACTURERS AND CONTRACTORS LIABILITY INSURANCE
OWNERS AND CONTRACTORS PROTECTIVE LIABILITY INSURANCE
OWNERS, LANDLORDS AND TENANTS LIABILITY INSURANCE
SMP LIABILITY INSURANCE
STOREKEEPERS INSURANCE

- It is agreed that the exclusion relating to the discharge, dispersal, release or escape of smoke, vapors, soot, fumes, acids, alkalis, toxic chemicals, liquids or gases, waste materials or other irritants, contaminants or pollutants is replaced by the following:
- (1) to bodily injury or property damage arising out of the actual, alleged or threatened discharge, dispersal, release or escape of pollutants:
- (a) at or from premises owned, rented or occupied by the named insured;
- (b) at or from any site or location used by or for the named insured or others for the handling, storage, disposal, processing or treatment of waste;
- (c) which are at any time transported, handled, stored, treated; disposed of, or processed as waste by or for the named insured or any person or organization for whom the named insured may be legally responsible; or

- (d) at or from any site or location on which the named insured or any contractors or subcontractors working directly or indirectly on behalf of the named insured are performing operations:
- (i) if the pollutants are brought on or to the site or location in connection with such operations; or
- (ii) if the operations are to test for, monitor, clean up, remove, contain, treat, detoxify or neutralize the pollutants.
- (2) to any loss, cost or expense arising out of any governmental direction or request that the named insured test for, monitor, clean up, remove, contain, treat, detoxify or neutralize pollutants.

Pollutants means any solid, liquid, gaseous or thermal irritant or contaminant, including smoke, vapor, soot, fumes, acids, alkalis, chemicals and waste. Waste includes materials to be recycled, reconditioned or reclaimed.

Signature of Insured

This Form must be attached to Change Endorsement when issued after the Policy is written.

ONE OF THE FIREMAN'S FUND INSURANCE COMPANIES AS NAMED IN THE POLICY

William d. Llanis

PRESIDENT

525 WEST MONROE STREET . SUITE 1600 CHICAGO. ILLINOIS 60606-3693

TELEPHONE (312) 902-5200
TELECOPIER (312) 902-1061
TELEX 298284 ATLAW UR

180 WEST PARK AVENUE 20106 - 1907 - 1907 2010 - 1907 - 1907 2010 - 1907 - 1907

223 EAST MONROE STREET SPRINGFIELD, ILLINOIS 62701-126 TELEPHONE (217) 753-4490

WRITER'S DIRECT DIAL NUMBER 902-5332

May 14, 1987

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Ms. Susan Swales CERCLA Enforcement Section (5HE-12) U.S. Environmental Protection Agency 230 South Dearborn Street Chicago, Illinois 60604

Re: Hannah Marine Corporation Lemont, Illinois

Dear Ms. Swales:

STUART N GREENBERGER (1932 - 1986)

On May 4, 1987 Hannah Marine Corporation ("Hannah") received the U.S. Environmental Protection Agency's ("EPA") letter dated April 30, 1987. That letter was a sequel to EPA's information request of January 26, 1987, and contained a second request for information.

As Hannah stated in its response of April 3, 1987, the relevant time period of EPA's response extends over a period of about thirty-six years, and not all of the information is available. Previously, Hannah made good faith efforts to respond to EPA's request and produced several thousand pages of documents. Included herewith are additional documents, located after the April 3, 1987 response was submitted, which may be responsive to Request No. 5. They are comprised of copies of the permits listed in Response No. 9, to the extent that they had not previously been submitted.

Upon receipt of EPA's April 30, 1987 letter, Hannah conducted yet another search and found no additional responsive documents. Hannah has also conducted additional interviews with present and former employees and has made additional inquiries in response to



Ms. Susan Swales May 14, 1987 Page 2

EPA's April 30 letter. During these interviews and inquiries certain notes were generated by me, or at my direction. Those notes are protected by the attorney-client privilege and the attorney work-product doctrine, both of which are hereby asserted. Without waiving the aforementioned privilege or doctrine, additional information that may be relevant to EPA's most recent requests is included below.

EPA requested information about "disposal of wastes into the canal," although the original letter contained no such specific request. Two pathways by which liquid wastes have been disposed into the Chicago Sanitary Ship Canal were clearly indicated on the diagrams provided in response to Request No. 10.

One is the discharge from Hannah's sewage treatment plant. About 600 gallons per day are discharged. This effluent is sampled and analyzed weekly by the Chicago Metropolitan Sanitary District. It is comprised solely of non-process domestic waste water from the plant. An on-site well whose age is unknown supplies water for use in the commodes. Water for all other domestic purposes is trucked to the site.

The other pathway is the "boiler blowdown." This pathway was permanently sealed in 1987 and is no longer in use. When it was in use, it transferred water by means of a 4-inch pipe from the boiler (used to heat water for cleaning barges) to the Chicago Sanitary Ship Canal. Water was supplied to the boiler from the Canal, and was supplemented by the above-referenced well. A water softening agent was added to prevent scaling, and when in use, the boiler was "blown down" an average of once every twelve hours or so. During each of these occasions, approximately 100 gallons were discharged to the Canal.

Additional investigation also revealed that in mid-1981 and on previous occasions, rainwater was pumped from the diked areas around the "vac tanks" and storage tanks (shown on the more comprehensive of the two diagrams previously submitted) to the Canal. It is believed that this was done a total of approximately six times.

EPA also requested additional information regarding the quantities and types of wastes disposed in the evaporation ponds (see Response No. 10), as well as the location which Browning

Ms. Susan Swales May 14, 1987 Page 3

Ferris Industries used for the disposal of the wastes taken from the ponds when they were removed. Hannah has had only limited success in finding the relevant information.

First, please note that the documents that Hannah previously submitted to EPA indicate that the evaporation ponds were removed in December 1979, almost a year before the effective date of the Resource Conservation and Recovery Act Subtitle C regulations. Therefore, Hannah has no RCRA maifest showing their desitnation. However, Hannah has learned from Browning Ferris that the material removed from the ponds was taken to the Winthrop Harbor - BFI No. 1 facility in Waukegan, Illinois.

At all times during their use, the ponds were only used for the disposal of wash water from the on-site waste tank, assuming the waste tank predated the ponds, which is not known. The waste tank contained wash water resulting from the barge cleaning process. For the most part, until about 1976 Hannah cleaned barges containing only asphalt and petroleum products. After that time it cleaned barges containing other types of products.

In the course of its recent interviews, Hannah has learned that the ponds were not continuously used since the inception of Hannah's operations at the Lemont facility. It is not known when the ponds were first constructed (if they were constructed at all) or when they were first used.

At various times Hannah apparently disposed of the contents of the waste tank by several means. As far as can be determined, it appears that Hannah had the wastewater transported by barge to the ECI Refinery in East Chicago, Indiana (around 1975). Later, the wastewater was trucked off-site by Waste Management, Inc. (around 1978). Finally, the ponds were used. The exact time periods of these activities is not known.

Finally, Hannah has been informed that it had on its site two pits into which waste petroleum products were placed. It is believed that these pits were located in the area where the tank farm is currently located and that they were removed approximately twenty years ago. Nothing more is known about these pits, assuming they actually existed.

Ms. Susan Swales May 14, 1987 Page 4

Hannah has again made all reasonable efforts to answer each request as fully as possible. The information conveyed herein is an accurate reflection of the results of Hannah's additional investigation. It is true to Hannah's best knowledge and belief, but has not been independently verified.

Nothing stated herein is intended to be an admission that U.S. EPA is lawfully entitled to the information it has requested, or that any particular action by Hannah subjects it to any statutory, regulatory, or other requirement, and shall not be so understood. Hannah waives no rights in responding to EPA's information requests.

Should you have any questions about this response, kindly contact me at the above number. Thank you for your cooperation.

Very truly yours,

Carey S. Rosemarin

CSR/djn Enclosures

217/782-6762

APPLICATION RECEIVEDS 11/18/85 Dr. dov Conditions
PERMIT NUMBER 996032-0316000051
PERMIT TESUED TOTAL ACCURAGE TO CONTINUE ACCURACE TO CONTINUE ACCURACE

NASTE STREAM NUMBER 1996033

Company of the first of the state of the factoring of the state of the

CHEM-CLEAP INC 11400 S STUNY 15LAND AVE CHICAGO , 11

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OF TOPP-SHIPYARY

THIS PLR-IT IS GRASTED SUBJECT TO THE ATTACHED STANDARY COMDITIONS AND

ETERMEL CCHAMBAN BARTHE CUPP PECTON: MAY/OCT CATCOROL TO EASTER, POS.
"APAGER, PERMIT SECTION
OLVISION OF LAND POLLUTION CONTROL

MASTE STREAM NUMBER 996032.
PERMIT EXPINES 12/22/84

CHEM-CLEAR INC 11800 S STURY ISLAND AVE CHICAGO , IL CHEM-CLEAR INC - SUITE 915
992 ULD EAGLE SCHOOL ROAD
WAYNE , PA
19087

WAGTE NAME: CAUGTIC WASH WATER - ARSTE CLASSIFICATION: MUN-HAZARDOUS NOT SURGECT TO FEL

PERMIT TO RECEIVE THE INDICATED ANOTH IS GRANTLE.

THIS PERCIT IS GRASTED SUBJECT TO THE ATTACHED STANDARD CONDITIONS.

DISPUSAL SITE: CHE H-CLEAR THE

TEP - STIE VU.: 0316000051

DISPUSITION OF MASIE:

BASTE TREATMENT.

ATTERTIONS NURS JATH
HASTE GENERATORS HANNAH MARINE CORP
361 FRUNTAGE RD-SUITE 101
SURR HIDGE 11
60521

TIPA GENERATUR NO.: 0438020004

HANNAH MARINE CORP-SHIPYARD

KINGERY RD AT ARCHER AVE

LEMONT

1 25 - 421

CC:HANNAH MARINE CURP RECION: N LAMIENCE W. EASTEP. P.E.

MANAGER, PERMIT SECTION CONTROLS
DIVISION OF LAND POLLUTION CONTROLS

## GENERIC WASTE STREAM PERMIT ATTACHMENT

SITE CODE: 0316000051

GENERIC M/S PERMIT NUMBER: 000052

SITE NAME: CHEM-CLEAR INC

SUP/OP PERMIT NUMBER: 19831785P

DATE RECEIVED: 10/31/83.

. DATE' APPROVED: .12/12/83

GENERIC WASTE CODE: 0030

GENERÎC HASTE NAME: WASTE FROM THE CLEANING OF TANKS AND EQUIPMENT

WASTE CLASSIFICATION: HAZARDOUS SUBJECT TO FEE

USEPA HAZARDOUS WASTE: NUMBER(S): D002,D005,D006,D007,D008

TREATMENT CODE(S):: T23, T24, T25, T31, T40, T41, T44

FLASH POINT (MIN): N/A F

PH (MIN): N/A

PH (MAX): N/A

MAJOR WASTE COMPONENTS ----

CODE:	NAME	MAX LIMITS.
9024	ARSENIC:	001 <sup>.</sup> PPT
0036	. BARIUM	001. % NT
0025:	CADMIUM	300 PPM
0031	CHRONIUM'	015 PPM
0030	LEAD .	005° X; HT
0027	· MERCURY	· 001.PPM
0028	SELENIUM	001 X NT
0034.	SILVER	001 % HT
0037:	SODIUY HYDROXIDE	015. X. VOL:
0038	CALCIUM HYDROXIDE.	· 015: %' VOL:
0039.	HYDROCHLORIC ACID	015 % VOL
0040-	SULFURIC ACID	015, % AOF.
0046	FERRICI CHLORIDE:	015 % VOL:
0001	WATER	099 % VOL'

ISPOSAL METHOD: WASTE TREATMENT

IKL.



## 2200 Churchill Road, Springfield, Illinois 62706

PERMIT ISSUED TO: LIQUID DYNAMICS

There was to be as a control of 114TH ST and the second 1939 HONEY LANGUE BEAR

CHICAGO

. IL 60628 CRETE SAFERISE

ILPA GENERATUR NO. 1 031

MASTE NAME: CONTAMINATED DILUTED LAUSTIC MASTE CLASSIFICATION: NON-HAZAPORUS LOT SUPJECT TO FEE

PERMIT TO RECEIVE THE INDICATED MADTE IN GRANTED.

THIS PERMIT IS GRANTED SUBJECT TO THE ATTACHED STANDARD COMPITIONS.

DISPOSAL SITE: CHGO/LIQUID DYNAMICS

1EF# 317E WU.: 03160041

ARRHAL VULIPE ANTHOFIZED: 1.000.000 GALLEGO DISPUSITION OF MASTE:

MASTE TREATMENT

ATTENTION: DENO FABRE

HANNAH INLAND MATERN #

MASTE GENERATOR: 107 STREET & RTE 83"

LEMBET.

60439

TEC:548

L PEGIONS W

CEAHANNAH INLAND WATERW

THOMAS E. CAVANAGH, JR. C 40000

DIVISION OF LAND POLLUTION CONTRO



# Crynonnental I Muecuon Agency

## 2200 Churchill Road, Springfield, Illinois 62706

APPLICATION RECEIVED: 03/26/82
PERMIT NUMBER 92/156-03/60056
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PERMIT NUMBER 92/156-03/60056
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PERMIT NUMBER 92/156-03/60056
PERMIT NUMBER 92/156-03/60056 The state of the second CALUMET CITY or IL 60409 CALUMET CITY or IL 60409

WASTE RAME: CONTAMINATED DILLITE CAUSTIC WA WASTE CLASSIFICATION: HAZARDOUS NOT SURJECT TO FFE

PERMIT TO RECEIVE THE INDICATED WASTE IS GRANTED.

THIS PERMIT IS GRANTED SUBJECT TO THE ATTACHED STANDARD CONDITIONS.

DISPOSAL SITE: CHICAGU/Clu PRUCESST

ItPA SITE NU.: 03160056

ANNUAL VULUME AUTHOPIZED: 1,000,000 GALLOWS DISPOSITION OF MASTE:

HASTE TREATMENT

HASTE GENERATORS HANNAH INLAND WATERW

107 STREFT & RTE 83

LEMONT , IL 60839 ATTENTION: - DINO FARSE

The Avisto Saligna esta y agreement of the estationary continuous in the conand the month of the second the second of the second

TEPA GENERATOR NO.: 03116200716

RECTEM

Lama K. Chatured RAMA K. CHATURVEDI, P.E.

WANAGER SFECIAL WASTE UNIT

RESIDUAL MANAGEMENT SECTION

RESIDUAL MANAGEMENT SECTION

OIVISION OF LAND/NOISE POLLUTION.CONTROL

## **人类和大利**生的 2200 Churchill Road, Springfield, Illinois 62706

HARCH 1 1982 AND 1 198

there is no the me severage to CALUMET CITY of ILr

60409 CALUNET CITY .....

THE PROPERTY OF THE PROPERTY O WASTE NAME: CAUSTIC WASTE WATER (4440H) 🚉 FASTE CLASSIFICATIONS HAZARDOUS SUBJECT TO FEE 🗎 🔭 🛬

PERMIT TO RECEIVE THE INDICATED WASTE IS GRANTED.

THIS PERMIT IS GRANTED SUBJECT TO THE ATTACHED STANDARD CHARTIONS.

UISPUSAL SITE: CHICAGU/CID #2

ILPA SITE \U. = U3160030

AMBUAL VOLUME AUTHORIZED: 1,000,000 GALLOWS DISPUSITION OF WASTE:

STREET BY SINGE IN TO SECOND OFF

BULK MASTE (SOLTO, LIQUID, BUNDER, OR SLUDGE) HIXED WITH DAILY RECEIPT OF REFUSE ABOVE GRADE (CODISPUSAL) THE PERSON OF TH

ATTENTION: MAYANK HUNS JAIN MASTE GENERATOR: MANNAH INLAND KATERW LEMONT SELECTION IN

TEPA GENERATOR NO.: 031162001

SPECIAL CONDITIONS:

HILE THE DISPUSAL OF BULK CIPUIDS IS NOT IN VIOLATION OF THE TEP AT THIS SITE MAY CONSTITUTE A DIRECT VIOLATION OF 40CFR SECTION 365 314(A)

RKC:DAH

CC:NANNAH INLAND WATERW

Pama & Chaturud and many PAMA K. CHATURVEDI, P.E. MANAGER SPECIAL HASTE UNIT TO THE STATE OF THE SPECIAL HASTE UNIT TO T PESIDUAL MANAGEMENT SECTION PEGION: N DIVISION OF LAND/HOISE POLLUTION CONTROL

Protection Agency 2200 Churchill Road, Springfield, Illinois 62706

DECEMBER 24,:1981 WASTE STREAM NUMBER 996032
APPLICATION RECEIVED: 12/15/81 PERMIT EXPIRES: 12/22/84
PERMIT NUMBER 996032-03160051
PERMIT ISSUED TO: CHEM-CLEAR CHEM CLEAR INC
11800 S STOREY I 997 EAGLE SCH RD:
CHICAGO , IL 60617 WAYNE PA 19007

WASTE NAMES CAUSTIC HASH HATER

WASTE: CLASSIFICATION: "NON-HAZARDOUS THIT SUBJECT TO FEE"

PERMIT TO RECEIVE THE INDICATED MASTE IS GRANTED.

THIS PERMITTIS GRANTED SUBJECT TO THE ATTACHED STANDARD CONDITIONS.

DISPOSALISITER: CHICAGO/CHEM CLEAR

IEPA SITE NO. 1 03160051

ANNUALE YOLUMELAUTHORIZED: 1,200,000 GALLONS DISPOSITION OF WASTES

WASTE: TREATMENT"

ATTENTION: . NUNS: JAIN

WASTE GENERATOR: HANNAH INLAND WATERW

107 STREET & RTE: 83

LEMONT'

, IL 60439

->CCCHANBAH! INLAND WATERW -

REGION: N

RAMA K. CHATURVEDI, P.E.

MANAGER SPECIAL WASTE UNIT .

RESIDUAL: MANAGEMENT SECTION:

DIVISION OF LAND/NOISE POLLUTION CONTROL

IEPA GENERATOR NO.: 0311



# Avinomichian Pricellon Agent

## 2200 Churchill Road, Springfield, Illinois 62706

DECEMBER 15, 1981 THE STATE OF

WASTE STREAM AUTHORIZATION NUMBERS 1 995677 AASTE STREAM AUTHORIZATION EXPIRES 12/10/

RONALD DELOACH RILEY ROAD .

46312

MASTE NAME: WASTE HYDROCARBONS NOT SUBJECT TO FEE

DISPUSAL SITE: IN/AMERICAN RECOVERY

IEPA SITE NU.: 91804906

ANNUAL VOLUME AUTHORIZED: 150,000 GALLONS DISPOSITION OF MASTE:

FACILITIES ENGAGED IN RECOVERY OF SOLVENTS, BILS, ACIDS, ETC., TREATMENT OF PROCESS

ATTENTION: NUNS JAIN

MASTE GENERATOR: HANNAH INLAND NATERH - IEPA GENERATOR NO.:

107 STREET & RTE 83

LEMORT - IL 60439

THIS IS A WASTE STREAM AUTHORIZATION ISSUED PURSUANT TO THE ILLINOIS POLLUTIC CONTROL BOARD'S CHAPTER 9 SPECIAL RASTE HAULING REGULATIONS\* WHICH REQUIRES TRACKING OF ALL SPECIAL WASTES ORIGINATING IN AND SEEKING TREATMENT, STORAGE OR DISPOSAL OUTSIDE OF ILLINOIS. IN ORDER TO TRANSACT BUSINESS LAWFULLY IN ILLINOIS, ALL ILLINOIS GEMERATURS AND/OR LICENSED WASTE HAULERS OF SPECIAL WASTE, THAT CAUSE OR ALLOW SPECIAL WASTE TO BE TRANSPORTED OUT OF STATE FOR TREATMENT, STORAGE OR DISPOSAL, MUST INSURE COMPLIANCE WITH THE ABOVE MENTIONED SPECIAL WASTE HAULING REGULATIONS INCLUDING BUT NOT LIMITED TO RULE 301, AND 501 OF SAID SPECIAL WASTE HAULING REGULATIONS.

RAMA K. CHATURVEDI, P.E.
MANAGER SPECAL MASTE UNIT
RESIDUAL MANAGEMENT SECTION
DIVISION OF LAND/NOISE POLLUTION CONTROL

RKCIDMF

CC: HANNAH INLAND KATERY
REGION:

\*\*COPIES OF THESE REGULATIONS ARE AVAILABLE THROUGH ILLINDIS PULLUTION CONTROL HOARD, 309 WEST WASHINGTON, CHICAGO, ILLINDIS 60606

217/782-6762

3 24, 1986 APPLICATION RECEIVED: 06/05/86 PERMIT NUMBER 950608-0310070002 PERMIT ISSUED TO:

AT PROSPER OF AN OWN AND

LENTURY UIL INC ALSTP.

EFRTUPY WILL INC. 13005 HANLIN COMPT ..... ALLITE

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13005 HAMEIN FUNKT

. 11 01050

MESTE HAWFE WASTE PRODUCT MAZARBING THE CLASSIFICATION: MAZARBING THE WORLDOT TO FEE

PER IT TO RELEIVE THE I DICTIFU WINTE IS GOVERNED.

STEPHONE SITE: CHITCH DIE 115

Tree 3116 was 4310430 to

DISPUTATION OF THE

WASTE TRESPIENT

ATTENTION: JONEPH C. HARBET MESTE GENERATORS MANNAM APINE CONP.

Sof faither go-sufficient Jock F196E it 6. 521

TES GENERATOR OF ANTROPOSTORA "ABLAD BURINE CURP-SHIPY SHE "INGERY NU AT ANCHER AVE 1 L

THIS PERMIT IS GRAMTED SUPDECT TO THE ATTACHED STADDARD COMDITIONS AND ANY SPECIAL COMDITIONS LISTED DELON. 1. 3. 2. S. of Senting & Spatian L. C.

COSHANNAH HERTHE COSE CHOIDA: WAYARDO

Kaurence W. Costep E. WEIGEL H. FAMIFF. F. F. F. ATRICER, PER TIT PECTTUR / COTTON TIVITION OF THIS POLEUTION CONTROL